

AMERICAN
FARMER



MARCH

1938

Harvey S. Firestone PUT THE FARM ON RUBBER



Insist on
Firestone
Ground Grip
Tires on Your
New Tractor
and Farm
Implements

THE pioneering spirit of Harvey S. Firestone has made farming more efficient, easier and more profitable. For years he worked with engineers and technical men on his homestead farm in Ohio, to put all wheeled farm implements, from the wheelbarrow to the combine, on rubber tires. He developed the first practical farm tire and then perfected the Firestone Ground Grip Tire, the greatest traction tire ever built. This tire enables the farmer to do his work in 25% less time, with greater comfort and with a saving of up to 50% in fuel.

Only the patented Firestone Ground Grip Tires have the following advantages:

Triple Braced Traction Bars provide more positive traction and do not bend, break or tear off as when unsupported.

52 to 89 Extra Inches of traction bar length give greater earth biting power.

32% Greater Surface Contact gives increased pulling power and longer wear.

Smoothen Riding is made possible because the traction bars are joined together and form one continuous contact with ground or road.

Better Cleaning in all soil conditions is made possible by the scientific spacing between the traction bars.

Longer Tire Life is provided by the patented Gum-Dipping process which protects against the penetration of moisture, guards against destructive internal friction and lessens the strain of heavy pulling.

Tread Guaranteed Not to Loosen because **Two Extra Layers** of Gum-Dipped cords under the tread provide inseparable union between tread and cord body.

SEE your nearby implement dealer, tire dealer or Firestone Auto Supply and Service Store today. Accept no substitute for Firestone Extra Value.

Listen to the Voice of Firestone featuring Richard Crooks and Margaret Speaks, Monday evenings over Nationwide N. B. C. Red Network

Firestone

GROUND GRIP TIRES

MORE FARM TRACTORS ARE EQUIPPED WITH FIRESTONE GROUND GRIP TIRES THAN ALL OTHER MAKES OF TIRES COMBINED

IT'S HERE

HUDSON 112

THE NEW
"LOWEST PRICED" CAR

New Hudson 112 Six-Passenger Sedan, \$755—fully equipped, ready to drive, Federal taxes paid—transportation and local taxes, if any, extra.



"NOW THERE ARE FOUR"

Say Owners of the "Other Three" Leading Lowest Priced Cars

Weeks before the new Hudson 112 was announced, we put it to a most amazing test.

We went to the most exacting car buyers in the world . . . owners of the "other three" leading lowest priced cars! "Compare your car with the new Hudson 112," we said. "We want facts. Just give us your honest opinions."

And here's what they discovered... that the new Hudson 112 is the *biggest* car in the lowest price field . . . the *smoothest running*, the *safest* . . . yet one of the most *economical*!

Wideest windshield in any popular priced car. Safest stopping ever built into any automobile, finest hydraulics

plus a *separate* mechanical reserve system that takes hold automatically from the *same* brake pedal if ever needed. Body *all* of steel, of course, including roof.

Only two or three cars *at any price* give you so much seating room, luggage room, head room, leg room. And *no* other car gets so *much* power, smoothness and flexibility from so little gasoline.

Come and see the new Hudson 112 . . . drive it. Let it prove everything we've said about it.

HUDSON MOTOR CAR COMPANY
Detroit, Michigan

Companion Car to the new 1938 HUDSON Terraplane • HUDSON Six • HUDSON Eight • HUDSON Terraplane Business and Utility Cars

112-inch Wheelbase . . . 6 Cylinders
... 83 Horsepower

\$694

For 3-passenger Coupe; \$724 for Brougham; \$740 for 4-passenger Victoria Coupe, the only 4-passenger Coupe in the lowest price field with all passengers riding inside; \$755 for Sedan—fully equipped, ready to drive, Federal taxes paid—transportation costs and local taxes, if any, extra. With the new low-cost Hudson-C.I.T. Time Payment Plan — terms to suit your crop income.

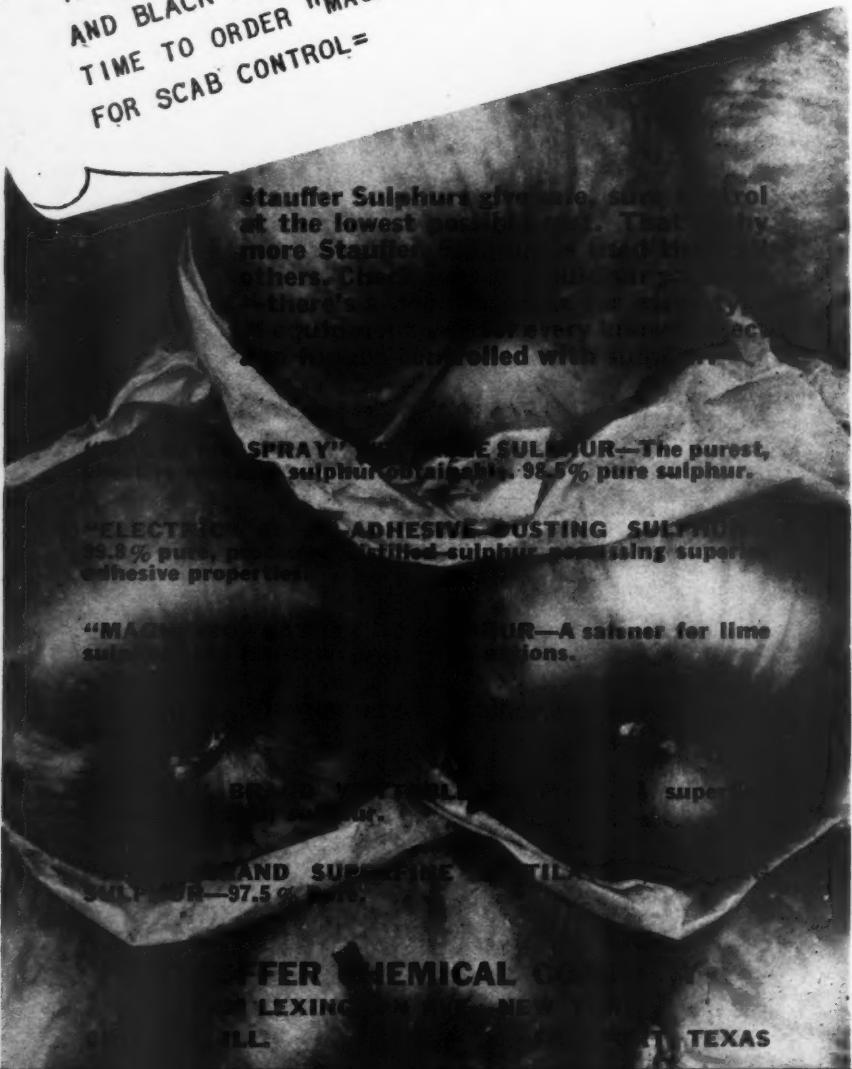
A BETTER DEAL FOR YOUR DOLLAR!

PEST CONTROL

STAUFFER SULPHUR

FLASH

USE "MAGNETIC" CATALYTIC SULPHUR IN YOUR LEAD ARSENATE-LIME SULPHUR SPRAYS. A SAFENER WHICH, WHEN ADDED TO THIS SPRAY COMBINATION, PREVENTS THE FORMATION OF HARMFUL ARSENICAL COMPOUNDS AND BLACK LEAD SULPHIDE SLUDGE. IT WILL SOON BE TIME TO ORDER "MAGNETIC-SPRAY" WETTABLE SULPHUR FOR SCAB CONTROL=



"The standard of value in Sulphur"

Nationwide News

Promotion of Texas' horticultural opportunities seems assured with the expected organization of a State Horticultural Society. Organizing committee representing fruit growers: J. Adam Asch, Mission (citrus); Vander Gauss (berry); Cecil Brown, Friendwood (fig); J. T. Patterson, Houston (grape); R. B. Alexander, Weatherford (peach and plum); W. S. Price, Austin (pecan). Chairman of the organizing committee: S. H. Yarnell, College Station.



After a year's operation, outstanding abuses of the Vermont apple grading law have been corrected and there is now much less misgraded fruit, reports H. A. Dwinell, director of markets, Vermont State Department of Agriculture. In 572 different localities, 721 inspections were made.



A new grape co-operative is being planned by Michigan growers, led by R. G. Hollis. It is contemplated the organization, to be known as Michigan Grape Products Co-operative, will manufacture juices, jellies, and jams, and handle frozen fruit.



Hoge Bros. Fruit Farm in Virginia employs trap doors and chutes in their three-level packing and storage building. Empty containers are transferred from loft to packing room below, and packed fruit is in turn moved to the storage by this method.



With an indicated 300 per cent increase in number of growers using the seal in 1938 over 1937, popularity of the Hoosier "Seal of Quality" is evident. Wider range in number of commodities bearing the seal is expected.



Leading apple growers of Kansas are much in favor of the recently passed upon National Apple Institute research program designed to supply facts directly useful in increasing apple consumption.



Stepping beyond contemporary fruit advertising with seven league boots Sunkist comes out with what is apt to go down as classics in revealers of lemon uses.



Natural phenomena: Maine blueberry growers in 1937 froze a million pounds of blueberries into \$900,000 liquid assets.

MARCH

VOL. 58

1938

NO. 3

AMERICAN FRUIT GROWER

The
NATIONAL FRUIT MAGAZINE

CONTENTS

Nationwide News	4
Apple Pollination and Fruit Setting	7
By A. E. Murnek	
The Camera Grows a Strawberry	8
Alternate Bearing—What Can We Do About It?	9
By A. Lee Schrader	
Peach Pruning	10
Strawberry Planting	10
Sweet Cherries—Our Luxury Fruit	11
By Francis M. Coe	
Five-Point Program of NAI	12
This Business of Growing Grapes	13
By F. N. Fagan	
American Pomological Society	14
A Page Conducted in the Interests of the Society	
Coming! The Annual June Directory Edition and Buyer's Guide	15
State News	16
Camera Closeups at the Conventions	18
Grape Disease Control	29
By A. L. Pierstorff	
Inventory Time for Fruit Farms	35
Propagating Black Walnuts	36
New Time and Money Savers	37
By Handy Andy	
Successful Orchards	38
A Round Table Page for Every Grower	

AMERICAN FRUIT GROWER

Published Monthly by
AMERICAN FRUIT GROWER PUBLISHING CO.
1170 Ontario St., Cleveland, O.

E. G. K. MEISTER
Publisher

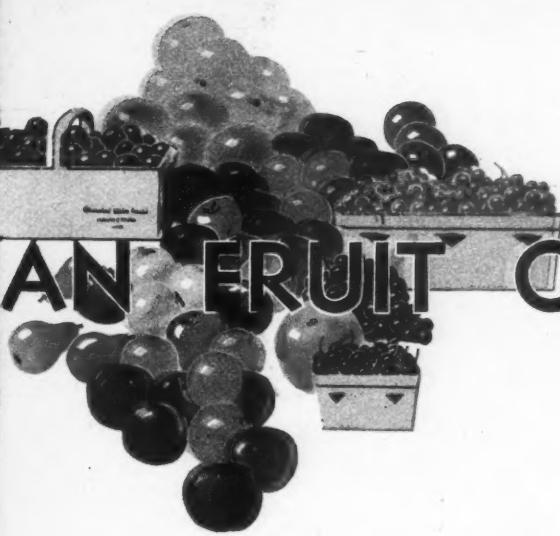
DEAN HALLIDAY DR. J. H. GOURLEY
Managing Editor Associate Editor
E. A. KRAUSE WILLIAM H. ZIPF
Associate Editor Field Editor
T. J. TALBERT MARY LEE ADAMS
Contributing Editor Home Economics Editor

BRANCH OFFICES and Representatives

NEW YORK CITY, Room 1212, 30 Rockefeller Plaza,
Phone—Circle 7-1863.
ROGER FISON, Eastern Manager.
CHICAGO, 123 W. Madison St., Phone—Central 5465.
J. C. BILLINGSLEA CO.

SUBSCRIPTION RATES

Domestic Except Cleveland, 3 years \$1.00, 1 yr. 50c.
Cleveland and foreign (except Canada) \$1.00 per year.
Canada, 50c per year.
Entered as second-class matter at Post Office at Cleveland, Ohio, under the Act of March 3, 1879.
Additional entry at Mount Morris, Illinois.



"PUT THE GREASE WHERE THE SQUEAK IS"

OUTSTANDING characteristics of the American fruit grower are courage, optimism, and the will to win. No season has ever been so good or so bad but he comes out of it at this time of the year with a firm conviction that he will make the coming one better.

But in just what way can he improve his practices of the past and thus gain greater security for his enterprise? No single formula will fit all and no panacea can be suggested, but AMERICAN FRUIT GROWER suggests ten Resolutions for 1938. If others fit better, adopt them, for in the words of an old wag we can say, let's "put the grease where the squeak is."

1. First and foremost we would place careful and thoughtful management. Elimination of "leaks," a study of expenditures, fair but intelligent employment of labor, and a use of all available information, will make for greater efficiency. Wasn't it Theodore Roosevelt who said, "Thrift is wise spending?"

2. The production of clean fruit, for which there is no substitute. Can we not reduce spraying to a reasonably simple formula—a thoroughness which we have never reached before, timeliness of each spray, and the use of any of the various effective spray materials on the market? It is not so much the choice of materials as the human element in their application. It's the man behind the spray gun.

3. A cultural system that conserves the soil. Moisture and nitrogen are more likely to be limiting in most orchards than any other factors, but where exceptions occur the limiting factors should be supplied. This again is a simple, not a complex formula.

4. Moderate pruning. Many young trees are delayed in bearing and many older ones have the crops reduced by over-pruning. Here there may be some disagreement, but study the facts.

5. Eliminate unprofitable sections of the orchard and varieties that no longer fit into present markets. This does take courage but it will save expense and leave greater net returns. There is a well merited trend in this direction and it will gain momentum.

6. Place varieties on the market only when in their season and in prime condition.

7. Attack the cull problem at home. A united attack is needed. Remove inferior fruit from the trees before harvest, study the possibilities of by-products in all their forms, turn the necessary culls into some sort of profit if possible, but reduce the amount of undesirable fruit coming onto the general market.

8. Put up a uniform and honest pack. The marketing problem will not be solved so long as the buyer is disappointed in the contents of the package. There is a market for cheap apples as well as the higher priced grades but each should be sold only for what it is.

9. Support cordially all sound movements to improve the advertising and sale of fruits of all kinds. No one has a better product to market.

10. First, last, and all the time have faith in yourself. While you have that you have everything.

Haul Your Fruit Loads With INTERNATIONALS



This International works for the Limoneira Company, Santa Paula, Calif., large-scale lemon growing firm on the west coast.

You get the real measure of International Trucks when they go to work for you, hauling your loads week-in and week-out. Then you have a chance to appreciate and enjoy their economy and sound engineering as they give you A-1 performance at lowest cost per ton or mile. They're ruggedly built to take the punishment of the daily grind in the orchard and on the highway.

Here's another thing to keep in mind when you buy an International—the nearby dealer and Company-owned branch are equipped to give you factory-standard service all the years these trucks work for you.

See the new Internationals at any International dealer or branch showroom. Then put the one you need up against your own toughest test and *watch it work!*

INTERNATIONAL HARVESTER COMPANY
(Incorporated)

180 North Michigan Avenue

Chicago, Illinois

INTERNATIONAL TRUCKS

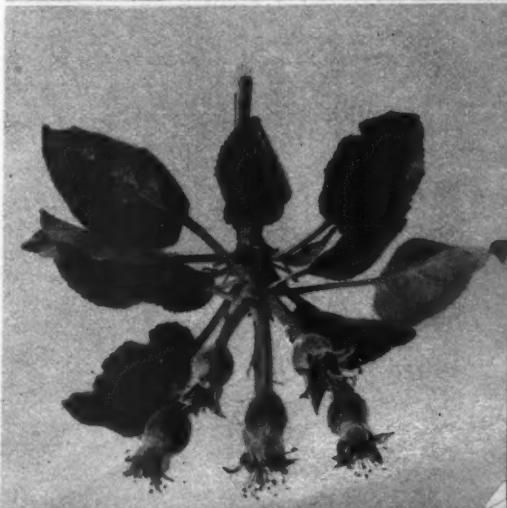
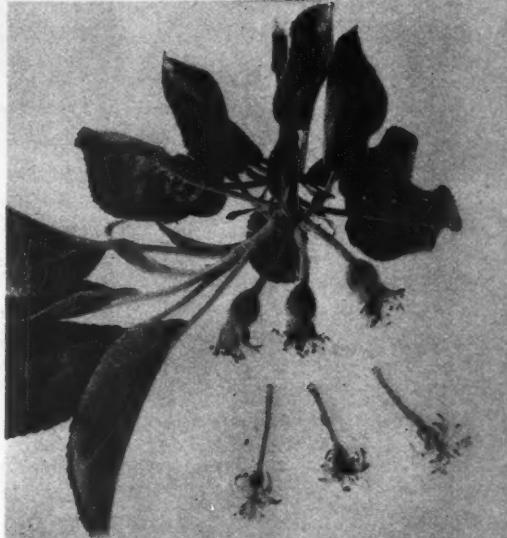
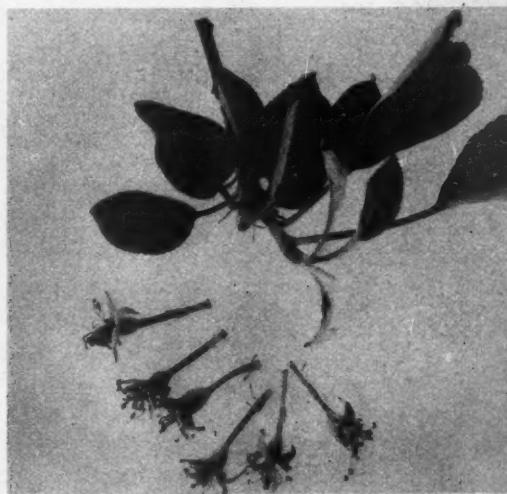


Left—Self-fruitfulness of apple varieties may be determined by enclosing several flowering branches in cheesecloth bags.

Below, top—Flowers not properly pollinated drop soon after the blossoming period is over.

Center—The three flowers that have "set" have been pollinated by a pollinating variety.

Bottom—With efficient pollination all flowers on a spur may set, but some will drop later.



APPLE POLLINATION AND FRUIT SETTING

By A. E. MURNEEK

Missouri Agricultural Experiment Station

FRUIT growers are quite familiar with the fact that though an apple tree may bloom profusely, only a relatively small percentage of the flowers will mature into fruit. A vast majority of the blossoms drop soon after flowering is over or at subsequent stages in their development. Often enough the various drops may be so great that the final yield is seriously reduced. The setting and development of apples, and most other fruits for that matter, is subject to a proper distribution in the orchard of the right kind of pollen and to effective fertilization of the flowers. To these requirements must be added a satisfactory nutrition of the developing fruit.

MARCH, 1938

The various popular varieties of apples seem to differ considerably in respect to their capacity to function as pollinizers and fruit setters. These differences appear to be hereditary. While not much can be done to modify an inherent condition as regards pollen production and fruit setting, with increasing knowledge of the nature of the difficulties involved, we have learned how to overcome them.

In respect to pollination efficiency and capacity to set fruit apple varieties may be divided into two groups:

Self-unfruitful: Arkansas Black, Arkansas (Black Twig), Cortland, Delicious, King David, Minkler, Northern Spy, Ralls, Red June,

(Continued on page 22)

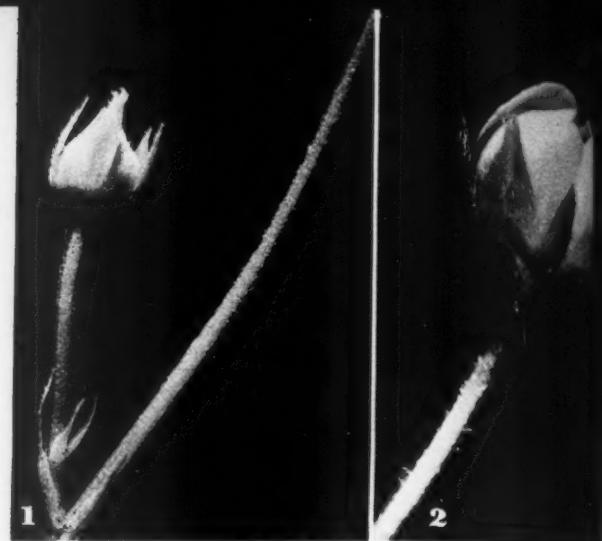
AMERICAN FRUIT GROWER

The

CAMERA GROWS a STRAWBERRY



3



1

2

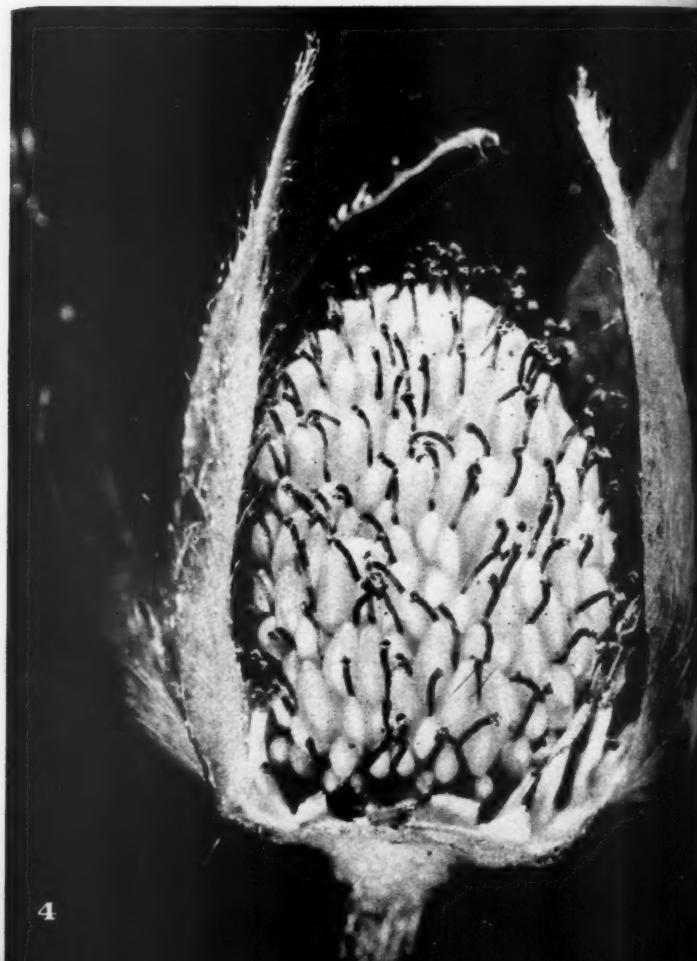
1—Perhaps even more than the strawberry grower himself, the camera has analyzed growth of a strawberry fruit on this page. The first illustration shows development of a bud-tipped shoot.

2—This closeup of the expanding bud shows the delicate hair-covered sepals opening to allow for growth of the flower parts. The white petals enclosing essential flower organs have burst open at the top and subsequent development will expose the protected parts.

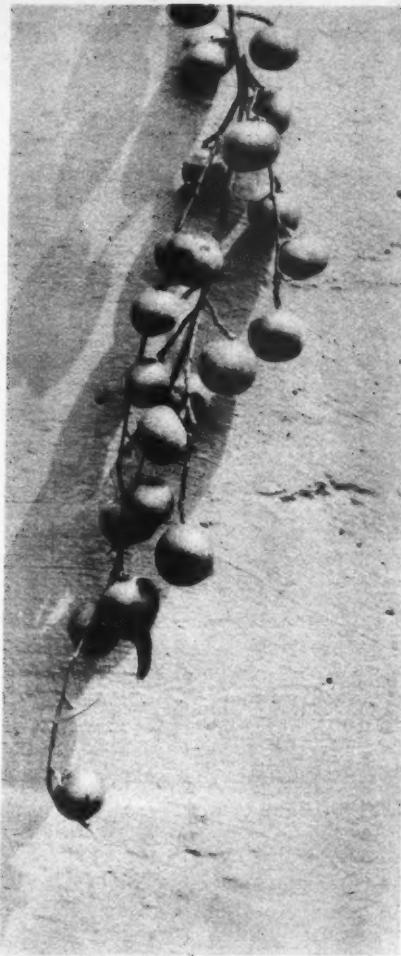
3—Silhouetted against white petals, the reproductive flower parts present a graphic story of horticultural wonder. The dark mass in the center is made up of stigmas and the black-tipped stems are the stamens. The latter release pollen that falls on the stigmas or female parts of the flower for the pollination and birth of a new fruit.

4—Blossom petals have fallen and the mass of individual fruits has started development. This remarkable photograph shows the tiny fruits of the strawberry in unusual detail. However, these individual units in the end will be only the dried, hard, seed-like particles found on ripe strawberries, for the receptacle, under the mass of tiny fruits in the photograph, will expand to form the round, pulpy, cone-shaped structure which is commonly known as the strawberry fruit.

This series of photographs by Black Star.



4



Good growth is easier to maintain with annual moderate cropping. Compare branch on left from tree with moderate crop with branch on right from tree with excess crop.

ALTERNATE BEARING



What Can We Do About It?

ALTERNATE bearing, also called biennial bearing, of fruit trees has worried fruit growers for generations, and formerly was responsible for the so-called "apple years" occurring every other year. When New York was the leading apple growing State, and the Baldwin, as a leading apple variety in northern states, alternated in cropping, the "apple year" was easily explained. Now the development of many sections and many varieties has changed the situation considerably. We no longer have strict alternations of crop years for the country as a whole, but biennial cropping does occur in various sections due to the habit of major varieties to bear biennially. Where the major varieties do not alternate in bearing, as with McIntosh, the alternation of crop years diminishes.

This alternate bearing with apples probably constitutes one of the earliest problems in crop production control and is still with us, regulated largely through the laws of nature. As with proposals to control production of other crops, many remedies and formulas have been advanced to change this bad "habit" of apple trees, so commonly enjoyed by several apple varieties including Bald-

win, York Imperial, Wealthy, Yellow Transparent; and Yellow Newtown. Even many supposedly annual bearing varieties frequently have fallen into these evil ways, including Stayman, Grimes, Rome, Jonathan, Ben Davis, and even McIntosh which has been held up as a model for regularity.

What about the several panaceas to cure this habit? Are the trees in the position of the man suffering with a common cold, whose friends offer a thousand and one cures and none of them of any value? Fortunately, no! The accumulated knowledge in plant sciences in recent years has given us insight into nature's laws in this regard. The many suggested remedies are now pieced together and analyzed in their combined effects to render a solution.

Pruning in the off-year, application of nitrogen fertilizer in the off-year or in the spring of the off-year, removal of blossoms by chemicals or by hand, thinning of the crop, effects of spring frosts, and irrigation have been studied in relation to tree growth and fruiting of biennial varieties.

Each part of these studies has led at one time or another to the belief that a single change in practice, such as pruning or fertilizing, would re-

By A. LEE SCHRADER
Head, Department of Horticulture
University of Maryland

sult in annual bearing of biennial bearing trees. Unfortunately, it has not been so simple a procedure. However, out of all of the studies, three general controlling principles have evolved which might be stated as follows:

1. As a tree grows, so it will fruit, or in other words, yield of fruit is related to amount of tree growth.

2. Blossoming and fruiting are exhaustive processes, utilizing food materials.

3. Blossom bud formation requires the same class of nutrients required for growth of tree and fruit.

In discussing principle number one, it might be recalled that the alternate bearing habit often has been considered as an inherited trait of a variety, fixed and immutable. Since annual bearing of so-called biennial varieties has been recorded, the habit cannot be considered as fixed in any variety.

Now it is realized that the length and diameter of terminal and spur growth, as well as type of leaf
(Continued on page 25)

PEACHES •

PRUNING

"The peach tree from year to year," says Dr. A. Lee Schrader of the University of Maryland, "may present a new problem of pruning which cannot be solved by experience of previous prunings." One grower, he points out, produced poorly-colored peaches under a dense covering of foliage. The grower had always used a "table-top-shearing" type of pruning and had been successful until he increased his application of nitrogen fertilizer. The response to nitrogen in added amounts was a dense growth of foliage which

Tests indicate that trees pruned so that peaches are exposed to sunlight, such as those shown here, will give higher yields of well-colored fruit. Corrective pruning will expose fruit on trees having heavy foliage growth in the tops.



cut off light from the fruit. Measurement of the light conditions showed only 200 foot candles under the tree foliage compared with 8200 foot candles in the open sunlight.

Dr. Schrader, reporting Maryland tests, states that corrective pruning of young trees too severely headed back proved easy to accomplish. The corrective pruning consisted of a light heading of main terminals and considerable thinning out of crowding branches to develop well-spaced scaffold branches.

In correcting bearing trees with dense growth of new wood in the tops, the pruning was not so simple. Two seasons of pruning were necessary to make a change in the top growth and to bring about an increase in fruit color. There was no more heading of the new wood.

Considerable thinning out of upright growth was accomplished the first season as well as cutting back wherever possible to good lateral branches. Slight improvement in openness of the tree and subsequent betterment of fruit color was found the first season.

During the second season, with further thinning out and much fewer upright shoots to combat, the cutting back to laterals in two or three-year wood resulted in an open, spreading tree with fruits colored 30 to 50 per cent contrasted to five per cent or less on trees pruned by the former method of heading back to new wood. In addition to the better color of fruit on these trees, the average yield was more than a bushel over the check trees.

Experience, summarizes Dr. Schrader, is a good teacher, if you can interpret its many lessons. The results in Maryland orchards serve to emphasize the importance of knowing tree response to pruning cuts and using the saw and shears with good judgment, based on this knowledge.

BERRIES •

STRAWBERRY PLANTING

When setting strawberry plants, it is best to place the crowns right at the ground level. If the crowns are too low, the plants may smother, and if too high, there is danger of injury from low winter temperatures.

Experience has shown that the best place to locate the strawberry "patch" is on a slope that receives maximum sunshine. The more sunshine, the earlier the berries ripen. Sandy or gravelly soils also hasten ripening, but good loams will give better yields. Since strawberry plants are shallow-rooted, they may be killed by heaving or freezing-out when grown in heavy clays, so this type of soil is to be avoided.

Air drainage, too, is of importance when selecting the strawberry location. Strawberry plants bloom early and blossoms are often killed by late frosts where there is no natural protection.

Grubs seem to have a preference for strawberry roots, and a sod plot is likely to harbor these pests. It is, therefore, good practice to set new plants only on soil that has been cultivated. Well-manured land or that which has had green manure turned under will give the best stands of new plants.

Although most strawberry varieties need no pollinating varieties planted with them, there are a few which must have other varieties nearby to insure fruiting. Most of the popular varieties will give crops when planted alone, but even these will produce better yields when interplanted.

Early spring has proved the best time for planting in all except the southern sections. Dry weather after

(Continued on page 34)





SWEET CHERRIES

Our Luxury Fruit

SWEET CHERRIES! Ripe, red, luscious! Great clusters festooning bending branches in the cherry orchard! Fortunate indeed the small boy who has a great spreading Black Tartarian tree to climb when warm June days ripen the tender purple fruits. Fortunate, also, the favored sheltered districts where this most particular of hardy tree fruits thrives and yields abundantly of big black Bings and crisp mahogany-colored Lamberts. Fortunate the American consumer, too, who has this epicurean luxury fruit brought to his table to enjoy at prices within his reach.

Only a few years ago the problems of the sweet cherry grower were those of how to grow the crop and prepare it for market. There were scores of eager marketing agencies anxious to pay him a good price for his product. But alas! Like the peach, orange, and grapefruit, the sweet cherry could not stand prosperity! High prices and lucrative returns to growers—two cars of Utah Bings netted 19 cents a pound in 1927—resulted in heavy plantings of sweets in California, Oregon, Washington, Idaho, and Utah from 1924 to 1930. Sharply increased shipments, combined with the severe reduction in demand accompanying the business recession, which hit the high-priced luxury fruits the most, brought price levels far below cost of production in western districts.

While prices and returns have recovered from their depression lows,

By FRANCIS M. COE
Utah Agricultural Experiment Station

A good set of Bing cherries is shown above. Adequate pollination is essential in sweet cherry orchards, since all varieties of this fruit are self-sterile and require cross-pollination.

the high proportion of young trees which have not reached full bearing age makes the attainment of the high prices enjoyed previous to 1929 unlikely in the near future. On the other hand, new plantings of commercial sweet cherries in favored locations have been moderate, and the long time outlook for this fruit appears favorable.

To a large extent the outlook for the production of sweet cherries depends upon the ability of the industry to stimulate greater demand for this delicious and refreshing "first fruit" of summer. Mass production industry has pointed out the way to increase demand for a product through lowering production and marketing costs in order to permit profitable production at prices low enough to stimulate consumption. Cherry growers may well apply these same tested principles to their own business, by reducing unit production and marketing costs to a minimum.

Perhaps the best means of reducing to a minimum production costs of sweet cherries is to make sure that no factor required to produce high

yields of fruit is overlooked. Climate, soil, site, water supply, variety and strain, rootstock, quality of nursery trees, planting, pollination, training and pruning, cultivation, fertilization, cover crops, protection from insect pests, diseases, rodents, and winter injury—all are important in building a high producing sweet cherry orchard. After the orchard reaches bearing age, additional problems of providing bees or other pollinating insects, frost prevention, pruning, spraying, maturity, harvesting, grading, packing, precooling, refrigeration, and marketing present themselves.

While detailed consideration of all these factors governing yield and quality of product is not possible here, a brief review of factors in cherry production which differ from those of other fruits, and those in which recent developments offer possibilities of lowering costs of production, may be of value.

Climate is probably of greater importance with the sweet cherry than with any other commonly grown fruit because of its narrow range of adaptation. Although of moderate hardiness and capable of withstanding lower temperatures than the peach when well matured, commercial varieties of sweet cherries are unable to withstand wide fluctuations of temperature, are extremely sensitive to sunscald or "southwest injury," and do not recover as readily as the peach from winter damage. In Idaho, V-shaped board protectors

(Continued on page 30)

FIVE-POINT PROGRAM OF NAI...



New president of the National Apple Institute is Kirk L. Keller, Creve Coeur, Mo. Keller is president of the Missouri Horticultural Society and has been active in NAI activities since the start of the organization.



Major C. E. Chase, left, secretary-manager of the Washington State Apple Advertising Commission, and Paul Stark, Louisiana, Mo., take advantage of a brief recess during the meeting for a chat on apple advertising and promotion methods.



WITH the backing of every important apple section and organization, members of the National Apple Institute at a recent meeting in Cincinnati formulated a comprehensive program for nationwide promotion of apples. This fourth annual meeting of the institute saw the unification of regional efforts for strengthening of the national organization. While the regionals will continue their efforts in specific sections, the program of the national group covers general and necessary endeavors for the successful distribution of apple promotional material.

The five-point program consists of:

1—The elimination of cull apples from competition with quality apples.

2—The correlation of regional programs for direct promotion on the use of apples.

3—Research.

4—Educational promotion, such as clip sheets to editors and radio material.

5—Unification of regional institute purchases, such as printing, supplies, etc., to bring about a saving to the regional groups through the use of standardized materials.

Kirk L. Keller, president of the Missouri Horticultural Society, whose efforts in behalf of the Missouri Apple Institute during the past season focused national apple advertising attention on his State, was elected to head the National Apple Institute. John Lyman, Middlefield, Conn., president of the New York-New England Institute, will continue as vice-president, and Dr. H. E. Barnard as secretary. W. B. Baughman of New Concord, Ohio, was re-elected treasurer. Prof. B. S. Pickett, president of the American Pomological Society, is chairman of the board of directors, and Dr. J. H. Gourley, retiring president of the NAI, is director of the research committee. Board of directors of the national organization is made up of representatives of each apple section, as are the other special committees.

Left, top—A leader in apple advertising, Carroll Miller, center, secretary-manager of Appalachian Apples, Inc., talks with G. B. Travis, assistant agricultural counsel for National Association of Food Chains, right, and C. Purcell McCue, prominent Virginia grower and director of Appalachian Apples, Inc. Center—Dr. R. R. Sayers, left, of the U. S. Public Health Service, lunches with D. B. Perrine, Centralia, Ill. Bottom—L. V. Doud, president of Indiana Horticultural Society, and R. K. Caldwell (right), Batavia, Ohio, grower.



This Business of GROWING GRAPES

It is a real pleasure to write an article about grape production because of the history connected with this fruit. A critical study of the history of all our fruits shows that there is no one item of cultural practice that points the way to successful production.

The final success, shall we say financial success, of any fruit plantation depends upon the ability of the management to so care for the plants—in all details balancing one item of care with all other practices—that they will respond to the treatments with high yields of fruit each year.

It is a pleasure to note in the history of grape growing that beyond any question of doubt the grape business has been a venture that has paid for the "living" of many thousands of people. One needs only to turn to the history of grape growing in Europe and North America to be impressed with the importance of the grape industry.

The grape, being one of the oldest of cultivated plants, we naturally would expect to find the production practices fully understood by all farmers producing grapes as a money crop. To a large extent this

By F. N. FAGAN
Pennsylvania State College

Good soil care, correct pruning, and thorough pest control have resulted in the strong cane and foliage growth shown above, which is necessary for high production. Photograph courtesy Pa. State College Agr. Exp. Station.

is true, for when we turn back into the pages of history, we find that the pruning of the vine has changed but little during the last 500 years. The pruning principle has remained the same because the habit of growth of the vine has remained unchanged. Certain changes have entered the business because of the culture of different varieties and species of the grape under many different conditions. Thus the spur system of training and pruning in the Old World has through years of experience on the part of growers given way to the many systems of long cane pruning and training now found in the vineyards of eastern North America.

The fertilization of the vine in North America has changed during the last 80 years, but nevertheless in principle the changes are minor. Both in Europe and North America the early vineyard owners added plant food by way of application of

manures. When the demand for plant food by growers became greater than the manure supply, the grower turned to the fertilizer bag. His vineyard then got the needed nitrogen, and in some cases its phosphate and potassium, in different form.

Some change has taken place in soil cultivation, but in principle the change is slight. With the change-over to chemical fertilizers many growers found that their vineyard soils were being depleted of organic material, since this was not now being supplied by way of barnyard manure. This condition brought about the use of cover crops in the vineyard. To grow enough organic material in the form of cover crops, shorter periods of clean soil tillage in the vineyard has been the result.

The spraying of vineyards for the control of insects and disease pests has changed greatly since the first applications were given the vine and fruit in Europe. However, the first spray compound used was "Bordeaux Mixture," and it is still the important compound used for grape disease control. So again we have another cultural practice in grape

(Continued on page 24)

APS

A PAGE CONDUCTED IN THE
INTERESTS OF THE AMERICAN
POMOLOGICAL SOCIETY

"APPLE ADVERTISING—DOES IT WORK?"

REAL money has been spent this year to advertise "King Apple." Grocers have co-operated as never before because some very well-directed push was put into the selling campaign. Colored posters, pamphlets, and recipe books have decorated grocery stores. Newspaper ads extol the food values of apples, and radio has added its voice. With such concentrated effort much has been accomplished to reawaken an appetite for apples. The large crop of 1937 was a difficult problem and prices to growers have been discouraging in many regions. That the advertising campaign was of real benefit is the opinion of those who have been close to the situation. Prices have been somewhat discouraging, but what might the result have been were it not for the advertising campaigns?

Every one of the regional apple groups has put a great deal of energy into advertising apples this year and an excellent start has been made in the right direction. There is every reason to believe that advertising if persisted in will do exactly as well by the apple as it has done by the other well advertised fruits.

Let Carroll Miller, secretary-manager of Appalachian Apples, Inc., tell the story of achievement as he told it at the recent meeting of the Peninsula Horticultural Society's annual convention at Camden, N. J.

"From very direct and pungent experiences during the past two years crowded with apple promotion work, I can answer emphatically the question which is my topic, 'Apple Advertising: Does It Work?' The answer is, 'Yes.'

"It is an axiom among advertising people that 'Good advertising of a good product ALWAYS increases sales.' The effects are as certain as that.

"Further, apples are responding splendidly to the advertising. The public as a whole likes apples. They have slipped from the public notice lately because the other fruits and vegetables have been so insistently telling the housewife and the grocer about themselves. Apples have been 'the forgotten fruit.' We are finding that we have but to call the Public's attention again to apples, and the response is quick and favorable.

"The grocer is in position to boost or to lower the sale of apples. By displaying them prominently and suggesting them to his customers, he can quadruple his apple sales. By putting them way back in the store, out of sight and mind of himself, his staff and his customers, there will be few apple sales. So we want first to be good friends of the grocers; to have them friendly toward apples; intelligently friendly. So we furnish them, free, display materials for windows, store interiors, counters. We give them literature about apples; talk to them; work with them; get them to put on

special displays of apples; try to convince them that there is at least as much profit in apples well handled as in oranges, grapefruit, etc., which they have been taught through years of grocer-service work by the citrus people to display properly and to 'push' to their customers.

"Backing up this work with the grocers, we use, wherever our budget permits, newspaper and radio advertising, direct to the public. This brings the public in to ask for apples. The grocer likes this. He works harder for apples when he sees that we growers are putting our dollars into his area to help him sell apples.

"To date, this season, we have placed our complete sets of apple display materials in 34,000 grocery stores of the Central East and South, which is our natural marketing area. We have conducted special apple campaigns in 18 cities, one by one; will work some six or seven more before the active apple selling season closes. It usually takes about one week to organize our campaigns in the larger cities.

"Our work, coupled with the work of the other regional apple advertising associations of the nation, has brought noticeable results, this season and last. It is not possible to reduce this aid to exact cents per bushel; but consider this: the 1937 apple crop, nationally, is 33 millions of bushels larger than the 1935 crop. It might be reasonably expected that prices this season would rule much lower, because of this huge 33,000,000 bushel increase. Yet prices have been almost exactly the same as in 1935, or just a trifle stronger. That is about the strongest evidence we can offer you, unless you come with us and see what we are doing as we do it.

"We were given powerful aid this season by the Organized Grocers of the nation. At the request of all apple-producing sections last August, the Organized Grocers of the nation agreed to put special selling efforts on apples, because of the big crop and likelihood of ruinously low prices. They have lived up to that agreement. At least 50,000 of the nation's largest-volume groceries have been 'pushing' apples actively, since mid-September, through their own advertising, displays, and sales efforts. This, with the advertising-promotion work done by the several regional apple advertising associations, has resulted in the largest acceptance (purchase) of apples by the American public in the memory of anyone. We get unanimous reports of this from all over the nation, and from all walks of life. This has been the thing that saved us from a thoroughly disastrous apple deal, I believe. This is a striking illustration of the possibilities in apple promotion when the growers of the nation are organized and prepared for it."

John Lyman, president of the New York
AMERICAN FRUIT GROWER

New England Apple Institute, in a report to the New York State Horticultural Society at Rochester, January 14, 1938, summed up some of the achievements of the New York-New England group as follows:

The popularity of the "Big Apple" dance was capitalized upon by presenting McIntosh apples at all of the leading first exhibitions of the "Big Apple" dance in New York City, Boston, and Buffalo. The active co-operation of the National Association of Food Chains was secured in pushing apple sales with five special "apple week" campaigns. This co-operation was secured by working in co-operation with the other national advertising groups. This was declared to be the most intensive drive ever put on by this association of retailers. The food chains have co-operated in preparing and using a large amount of advertising material for apples.

Grocers have been induced to co-operate in improving the merchandising of apples, and the institute has furnished over 300,000 pieces of attractive and effective advertising material to the trade.

Other effective methods of advertising the apple have been utilized by the institute, such as providing weekly radio programs over 62 stations, and apple stories went to over 1000 newspapers. Many other avenues of publicity were used, and Mr. Lyman finished his report by saying: "We must not lose the ground we have gained. We must have courage to press forward in the face of criticism. With the leaders of the apple industry co-operating, I predict that we can make 'King Apple' popular in the diet of all consumers."

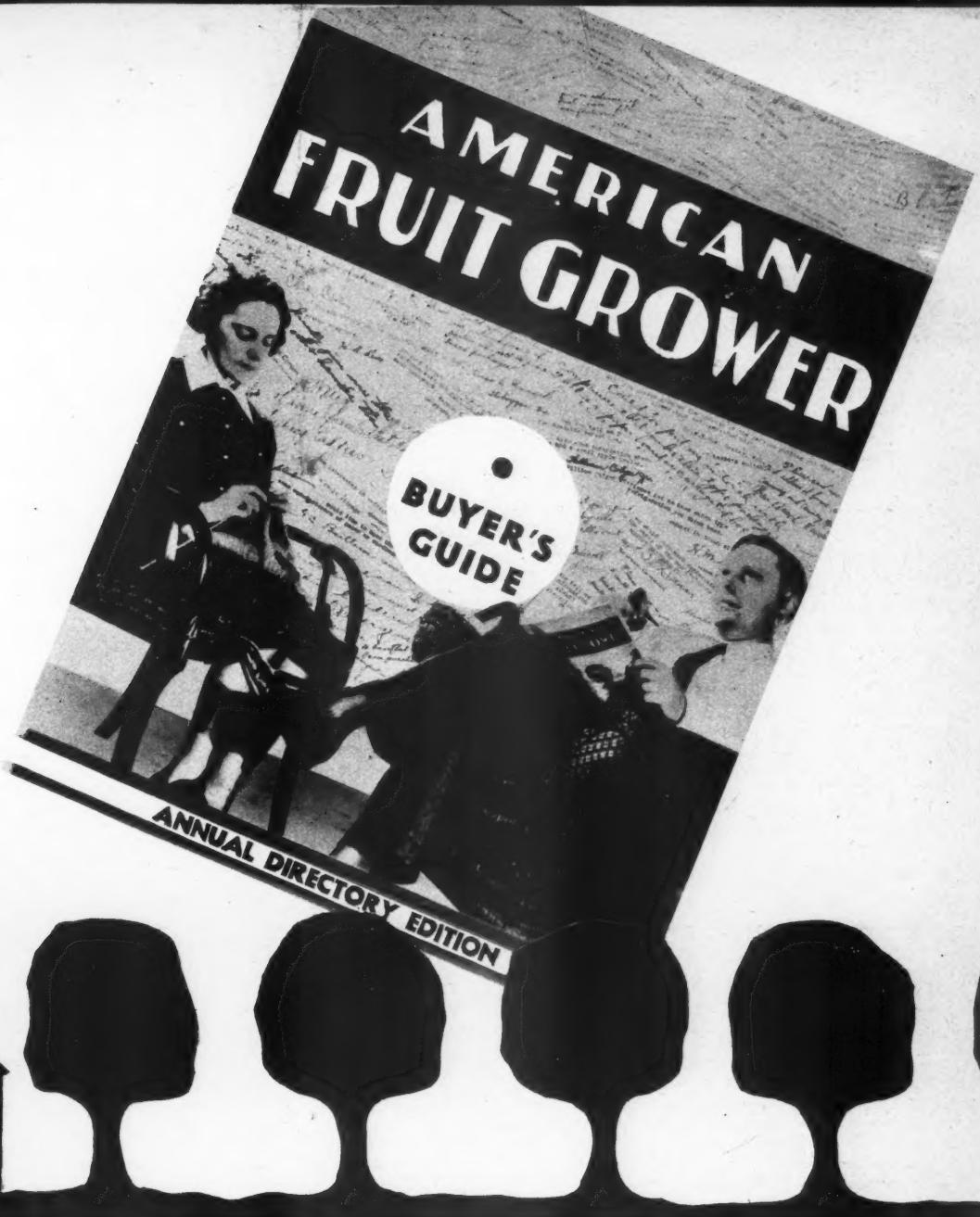
The work of the Ohio Apple Institute was described by W. B. Baughman, of New Concord, Ohio, at the Springfield, Mo., joint convention of the APS and Missouri State Horticultural Society held in December. "There was a big demand for the cook books published by the Ohio institute," said Mr. Baughman. "We printed 100,000 cook books; we printed them in two colors, and we delivered them to the grower at \$4 per thousand books. Another book cost one and one-half cents each. Many growers in Ohio had 10,000 of these books printed with their names included on the front cover. One chain store system purchased 30,000 apple cook books and made extensive use of them in connection with their apple sales."

The Michigan Apple Institute has also been in the campaign. The Pacific Northwest states have raised a large advertising fund by legislative action, which is being ably utilized to advertise the Northwest apple.

The general feeling is that the money and effort put into advertising the apple this year have been an invaluable aid in moving the crop. Growers and dealers have been brought closer together and that is a good start.

H. L. Lantz
SECRETARY

MARCH, 1938



COMING! *The Annual June Directory Edition*

ONCE again a staff of specialists is busy compiling the annual June Directory Edition of **AMERICAN FRUIT GROWER**. And once again this year's Directory and Buyer's Guide will be the most complete, most comprehensive, and most useful reference edition ever published for the commercial fruit growing industry.

To make this year's Annual Directory and Buyer's Guide more convenient and practical than ever before as the fruit grower's handy reference book, special attention is being given to complete indexing. Everyday questions about equipment, materials, supplies and accessories of all kinds for practical and profitable operation of a fruit farm will be easy to locate in the pages of the June Directory Edition.

This special issue will have care-

fully prepared sections devoted to each important phase of fruit farming. Each one of these sections will list information and reference material which the fruit grower will have need of throughout the year. And the fruit grower's wife will also find invaluable reference information at her finger tips in the pages of the June number.

To make the coming June Directory Edition and Buyer's Guide the biggest—and the **BEST**—published to date, our staff of research workers has been busy for months compiling, revising and adding to the indexed lists of manufacturers and distributors of all types of implements, tools, equipment and machinery required by fruit growers; materials and supplies of every kind; seasonal requirements; construction materials;

and

BUYER'S GUIDE

marketing and selling accessories, as well as household needs on fruit farms.

In a real sense the June Directory Edition and Buyer's Guide of **AMERICAN FRUIT GROWER** will be "required reading," and evening after evening the fruit grower and his wife will spend profitable hours perusing its handily arranged pages of information and listings.

STATE NEWS

NEW JERSEY—Incorporation papers for New Jersey Fruits, Inc., an organization to promote the use of apples produced in this State, were filed in Trenton on February 9 by New Jersey fruit growers.

The new organization, sponsored by the State Horticultural Society, proposes to establish a promotional and advertising campaign to increase New Jersey apple consumption. The campaign is to be financed through voluntary contribution by growers on the basis of one cent per bushel.

C. B. Lewis of Riverton is president of the new marketing group; Joseph Barton, Marlton, vice-president; Lawrence Smith, South River, secretary; and Prof. A. J. Farley, secretary of State Horticultural Society, New Brunswick, treasurer.

MINNESOTA—Max A. Nash of Tracy, a Minnesota Fruit Growers Association member, has spent considerable time studying the action of honeybees in relation to the pollination of his plum orchard. He has plenty of bees around at blossoming time but the critters won't go to work, at least not on his plums—instead, they work freely on nearby dandelion and golden willow. As a consequence, although his trees have bloomed profusely for



several years, he has had only one decent crop of plums.

Named varieties of Minnesota hybrid plums are known to require cross-pollination with native Americana type varieties or other compatible pollinizers. Mr. Nash has some of these pollinizers in his orchard but to help things along he placed large bouquets of wild plum bloom in containers of water hung in the blossoming tops of his trees. Almost immediately the wild plum bloom attracted numerous bees until these bouquets were fairly buzzing with them, but the blossoms on his hybrid plums remained almost deserted.

It is probable the fruit blooms ignored by the bees were those that produced nectar of low sugar content. If this is true, then it is not enough to know that certain varieties are compatible for cross-pollination. We must also know something about the behavior of honeybees under field conditions with respect to these varieties.

Mr. Nash believes that consideration must be given to environment in relation to competitive nectar-producing plants. He suggests that in isolated locations far removed from sources of high-sugar-content nectar the bees would work satisfactorily on blooms that produce nectar of low sugar content. The same might be true, he suggests, in certain years when the blossoming period of varieties that produce nectar of low sugar content did not overlap with the blossoming period of high-sugar-nectar plants.—J. D. WINTER, Sec'y, Mound.

KANSAS—Big question in the minds of many Kansas fruit growers is the replanting of depleted orchards and small fruit acreage. Due to drought, excessive heat, and insect pests, plantings of young trees and small fruits during the past three years have met with disaster. New plantings this spring will be done, as a rule, on the contour and with the view of soil conservation.

The project of irrigation for fruit growing in many of the Kansas river valleys where

shallow water is available and where proper soil surveys have been made is awakening wide interest among apple, peach, and cherry growers. Irrigated orchards in these valleys are netting good returns.—GEO. W. KINKEAD, Sec'y, Topeka.

TENNESSEE—Many years of dashed hopes prompted I. C. Murphy, one of our best informed fruit growers, to set us right on a moot point in apple growing. We were examining his trees hoping to find some opti-



mism in what we called "fruit buds". After refusing to admit that our choice of even the most promising were fruit buds (and we were prepared to offer at least an argument), he said, "No, they're only bloom buds." He's got something there, boys!

M. Cook, whose orchard at Santa Fe consistently yields profitable crops, mixes brains liberally with his fertilizer and spray materials. He showed us a block of 10-year-old Stayman, which had borne a heavy crop last year, and it was uniformly set up with "bloom buds" for this year. Knowing the bursting energy of Stayman apples, he had planted these Stayman trees on contours on thin land around the crest of a hill and then mulched them heavily.—A. N. PRATT, Nashville.

RHODE ISLAND—Winners in preliminary contests being held by Home Demonstration Clubs and the Granges are to compete in Rhode Island Fruit Growers Association annual apple pie baking contest to be held during the Agricultural Conference, March 17-19, in Providence. Competition promises to be keen—Rhode Island women enjoy a reputation for making good apple pies. Annual meet of the association: March 19, Providence.—E. P. CHRISTOPHER, Sec'y, Kingston.

WEST VIRGINIA—Some headlines from the 45th annual convention of West Virginia Horticultural Society, February 2-3, Martinsburg:

1. The "fresh pack" (from cold storage directly on order) is so superior to "the trade," the grocer and the consumer, that it must ultimately supersede the present "packed



for storage" system; and the sooner, the better.—Henry W. Miller, Jr., retiring president, Paw Paw.

2. Twelve million pounds of cherries are grown in this immediate area, and trees are just coming into full bearing. The wisdom of additional cherry plantings here now, in view of production in other areas, is not established.—John F. Ambrose, Charles Town.

3. For West Virginia, plant peaches that are harvested around August 18, for a market.—J. Howard Rappells, Romney.

4. Load cars "end-to-end"; start baskets at one bulk-head and build that row straight through to the other end. Stagger the second row into the "Vs" resulting. This gives the "22 by 22" method. Place a board across the three lower layers in each end row, to prevent "toppling".—J. P. Blount, Assn. of American Railroads, New York City.

AMERICAN FRUIT GROWER

5. Mechanical graders, washers and washing, truckers' rough handling: these are equally responsible with pickers' and packers' carelessness in causing excessive bruising.—H. W. Prettyman, Inwood.

6. The Golden Age for Fruit will be the coming 10 years.—Jacob Felt, Memphis, Tenn.

7. Apple growers must make friends with the grocers. They are "personal sales representatives" for apples to the public; and a salesman who knows but little about a product or is not friendly toward it, is a heck of a salesman.—C. R. Miller, Appalachian Apple, Martinsburg.

8. Officers for 1938-39: President, James E. McDonald, Martinsburg; vice-president, Dr. W. C. Van Meter, Petersburg; treasurer, Malcolm M. Brown, Martinsburg; secretary, Carroll R. Miller, Martinsburg.

9. Development of new markets and new customers is the most important work ahead for apple growers.—Resolution adopted.—CARROLL R. MILLER, Sec'y, Martinsburg.

NEW HAMPSHIRE—Banding together to protect a section of New Hampshire that has been producing fine peaches for the past 10 years, orchardists of the Beauty Hill section of Barrington have appointed a special com-



mittee to mark and condemn peach trees infected with peach yellows disease. Condemed trees are to be dug up and burned.

This disease in the past four years has killed thousands of trees in the State. It was first reported in New Hampshire in August, 1933, when a Barrington grower announced that part of his orchard had leaves of a sickly yellow color. Today this grower has none of his 60 trees left. All were wiped out by peach yellows. Another orchardist of Barrington has had to destroy over 700 peach trees since the disease started. A third grower's orchard of 200 trees has been reduced to five by this same trouble.

Members of the committee: C. O. Rawlings, extension horticulturist at University of New Hampshire; Dan Adams, county agricultural agent; and one grower.—H. L. STARBIRD.

WISCONSIN—From the Carpathian Mountains in Poland comes another supply of Crath's Carpathian English walnut seed which will be distributed for trial purposes by Wisconsin Horticultural Society as has been done during the past three years.

Well over 3000 horticulturists—from Maine to Idaho—are now co-operating in testing this strain of hardy English walnuts. So far reports are encouraging. Most of the co-operators obtained germination of from 60 to 80 per cent from the seed sent out. Wherever seeds failed to grow, replacements are being made by the society.

Readers of *AMERICAN FRUIT GROWER* who wish to try this strain of hardy English walnuts should write Wisconsin Horticultural Society, 1532 University Avenue, Madison.—H. J. RAHMLOW, Sec'y, Madison.

MARYLAND—Discussions at 40th annual meeting of Maryland State Horticultural Society recently held in Baltimore brought out these major points:

Spreader and stickers in sprays should be (Continued on page 19)

MARCH, 1938

Before the Blossoms

COMBINED SPRAY

"BLACK LEAF 40" Effective for Aphis, Leafhopper, Red-Bug, Bud-Moth and Similar Insects

"BLACK LEAF 40" is outstanding as a destroyer of aphis... used with the delayed dormant spray it is effective and costs are kept down.

When the ground has settled and buds are swelling, scab protection is required. This is the best time to kill aphis and bud-moth, using "BLACK LEAF 40."

"BLACK LEAF 40" Used with Lime-Sulphur and Lead Arsenate Gives Maximum Control of Orchard Pests

The experience of thousands of fruit growers has proved that one delayed dormant combination spray of "BLACK LEAF 40," Lead Arsenate and Lime-Sulphur controls rose aphis, bud moth, San Jose scale, scab and other destructive insect pests. "

Look for the Leaf on the Package

3825

**Black
Leaf
40**

TOBACCO BY-PRODUCTS AND CHEMICAL CORP. INCORPORATED

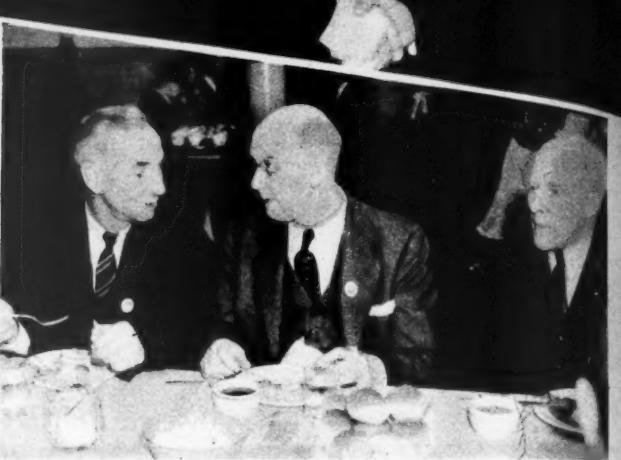
LOUISVILLE

KENTUCKY

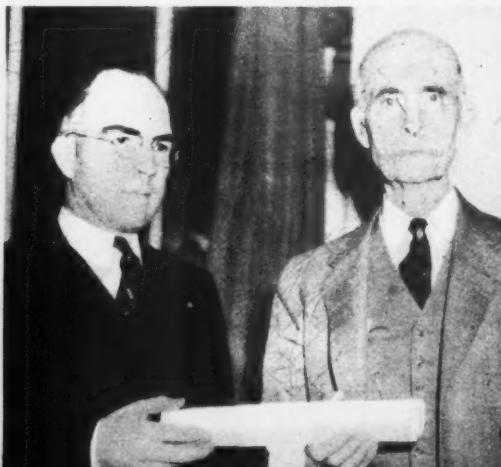
CAMERA CLOSEUPS at the Conventions...



Above—Enthusiasts at American Pomological Society convention in Springfield, Mo. Left to right, Dr. A. E. Murnek, University of Missouri; J. C. Ellston, Exeter, Mo.; W. B. Baughman, National Apple Institute treasurer, New Concord, Ohio, and H. L. Lantz, Iowa State College, secretary of the APS. Above, right, Frank Farnsworth congratulates Harry Lutz, right, new Ohio Horticultural Society president, as Ralph Varian, newly elected vice-president, looks on. Right, New York society secretary, Roy P. McPherson, center, Leo Gross, LeRoy, left, and F. W. Cornwall, Pultneyville, snapped while lunching during the Rochester meeting.



Right—Busy conversationalists at the Michigan meeting are, left to right, L. G. Morrill, St. Claire; S. A. Greene, Hillsdale; and Percy Anderson, Fremont. Below, left—Proud recipient of an Ohio Master Farmer award is fruit grower Howard Scarff, New Carlisle, left, presentation of medal being made by L. L. Rummell, Columbus. Below, center—Only Award of Merit presented this year by the Michigan society went to E. C. Reid, right, of Allegan, by way of Stanley Johnston, superintendent of the South Haven Experiment Station. Mr. Reid was secretary of the Michigan society from 1888 to 1900. Below, right—Ohio society members Ross Sims, Groverport, left, and Alton Lynd, Pataskla, examine some new raspberry plants.



STATE NEWS

(Continued from page 16)

used properly or they may cause spray to spread too much or stick on too tightly. Peaches brushed at packing time should be dusted by use of sulphur in the brush machine. In scale control, best results are had by removing loose bark from tree trunks before spraying. Lime-sulphur has a deterrent effect on summer broods of San Jose scale when used as a dormant spray. The new dinitro spray is an effective ovicide in aphid control and may supplant tar oil.

Probably most serious problem facing the future of the apple industry is the flood of poor apples that glut the early market. Growers realize it is in their hands to correct this situation. In fact, the future of the industry is tied up with general improvement of the product, increasing of apple uses, more efficient production, and removal of marginal trees, according to opinions expressed by growers in the various meetings. Marginal trees are those of unsuitable variety, of poor vigor or on poor soils, and there are plenty of trees in Maryland that will be removed, this year, mainly on account of variety.—A. F. VIERHELLER, Sec'y, College Park.

NEW YORK—There is a reawakening of interest in stone fruits in western New York this season. Prices for sour cherries were rather good last year and growers have responded by increased plantings. Likewise, the prune-type plums have seemed to bring good prices, and early varieties of peaches have commanded premiums.

Just how far this swing will go is one of the questions, and there is always the danger that it will go too far and be overdone. Farm bureaus throughout western New York have been reacting to the situation and have been conducting Stone Fruit Schools for the first time in several years where apples have previously been the main topic.

Out-of-State speaker for the county-wide spring meetings of the Farm Bureau in western New York fruit counties is Dr. George F. Potter of the University of New Hampshire.—H. B. TUKEY, Geneva.

VERMONT—"Examine your soil for its physical properties, depth of rootage, moisture-holding properties, and adaptability to orchard purposes," Vermont growers were recently urged by Dr. L. B. Batjer of the U. S. D. A. Horticultural Field Station located at Beltsville, Md. Dr. Batjer presented his talk on orchard management in relation to water and nutrition at the Vermont Horticultural Society annual meet and fruit show in Burlington.

In stressing the importance of water, Dr. Batjer cited an instance where a 25-year-old tree "drank" one pound of water per minute. This would total about 6000 gallons per acre per day. One-third of the water is used in growth of the tree, one-third is lost through transpiration, and one-third is used for fruit development.

Application of large amounts of nitrogen two or three weeks before blossoming time and within three or four feet of the trunks of trees was recommended by Dr. Batjer. He also suggested using a 4-12-4 fertilizer for cover crops, at the rate of four pounds per acre.—M. B. CUMMINGS, Sec'y, Burlington.

MAINE—Twenty-two certificates of membership in the 90 Per Cent Clean Apple Club were awarded on the basis of the 1937 crop—quite an achievement in such a scab-favoring season—during Maine Pomological Society annual meet in Lewiston. Membership roll was topped by Arthur Blanchard, Cumberland Center, with a score of 98.6 on Golden Delicious apples. Second high score, 98.5 per cent, was that of Mrs. Blanche Hardy of Holden.

Officers elected: R. H. Lovejoy of Sanford, president, and E. L. White of Bowdoinham, secretary. A one-day meeting is being sponsored by the Society at Orono, March 31, as part of Farm and Home Week.—J. H. WARING, Orono.

MARCH, 1938

Choose Transportation THAT "FITS"

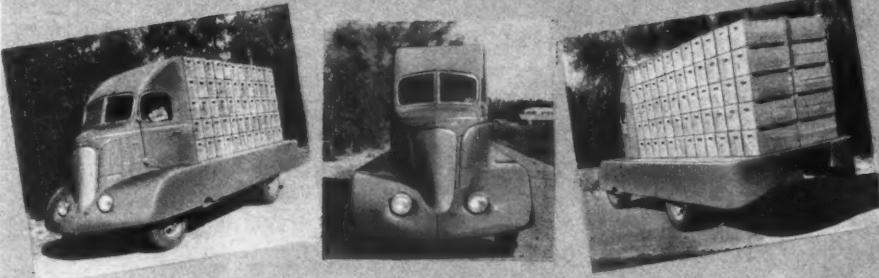


Both conventional and cab-over-engine GMCs are widely used in grove cultivation and harvest. Both standard and special bodies are profitably employed. GMC acceptance in citrus farming results not alone from low first investment and known operating economy, but also from a wide choice in chassis (1/2 to 15 tons)! Go to your GMC dealer. He will show you how to "fit" GMC to your every job.

Our own Y. M. A. C. Time Payment Plan assures you of lowest available rates



SPECIAL TRUCKS, TOO



This adapted GMC with dual performance rear axle (for heavy pulling) "fits" between trees without injuring fruit! It has numerous other advantages.

GENERAL MOTORS TRUCKS & TRAILERS

GENERAL MOTORS TRUCK & COACH

DIVISION OF

YELLOW TRUCK & COACH MANUFACTURING COMPANY, PONTIAC, MICHIGAN

AMERICAN FRUIT GROWER

PAGE 19

Spray for



OHIO STAYMAN



MICHIGAN BALDWIN

FINE COLOR

The "eyes" have it when it is a question of buying or selling apples. Appearance counts—size, shape, COLOR and FINISH determine whether or not you get a PROFIT PRICE. That is why practical, money-making growers everywhere have changed over to Sherwin-Williams DRY LIME SULFUR with SULFIX SULFUR-WET-TABLE—the Safety First Summer Spray.

With this new S-W combination growers can SPRAY for SALES APPEAL. This spray combination assures A-Grade apples of FINE COLOR and FINE FINISH because it guards against scab, against russetting, but does not injure foliage.

What is the secret? Here it is—

THE DRYING FILM OF LIME SULFUR HOLDS THE PARTICLES OF SULFIX SULFUR IN A UNIFORM, HEAVY COATING THAT IS NON-TOXIC TO FRUIT AND FOLIAGE BUT EXTREMELY PROTECTIVE AGAINST SCAB.

Because in this new S-W combination Dry Lime Sulfur will WET Sulfix Sulfur quickly, leading growers now use it exclusively instead of gambling with old style, expensive and uncertain wettable sulfur with liquid lime sulfur. These growers in their testimonials join us in recommending this new combination as the MOST EFFECTIVE, SAFE and ECONOMICAL of SUMMER SPRAYS.

DR WETTA

WRITE FOR

THE SHERWILL

Insect partm

101 Prospect Ave. Cleve

SHERWIN-WILLIAMS
SPRAY AND DUST MATERIALS

Sales Appeal

ILLINOIS
STARKING

The FINE FINISH of the apples illustrated are the result of using S-W Dry Lime Sulfur with Suffix Sulfur-WETTABLE.

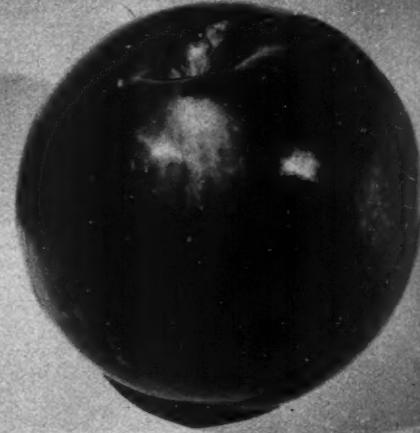
TABLE
BLUEFUR

FREE FOLDER

SHERWIN-WILLIAMS Co.
Insect Department
3000 West 12th Street
Cleveland, Ohio.



NEW YORK SPY



PENNSYLVANIA McINTOSH

FINE FINISH

You, too, can spray with the certainty of producing apples of FINE COLOR—FINE FINISH—AND SALES APPEAL by simply switching over to the use of Sherwin-Williams Dry Lime Sulfur with S-W Suffix Sulfur-WETTABLE.

You will find, as every other user has, that this new S-W Summer Spray Combination produces BETTER APPEARING—BETTER SELLING APPLES because it PROTECTS against SCAB; ELIMINATES risk of RUSSETING, which always threatens when liquid lime sulfur is used; GUARDS against FOLIAGE INJURY. DRY LIME SULFUR is used as the wetting agent, which in itself is a most effective fungicide. It SPREADS uniformly and STICKS to fruit and foliage.

THE SHERWIN-WILLIAMS Co.

**DRY LIME SULFUR—SULFIX
SULFUR**
1938 SPRAYING SCHEDULE

	No Scab	No Russet	No Foliage Injury
Pre-Pink and Pink	3 lbs. Dry Lime Sulfur 5 lbs. SULFIX Sulfur		
Calyx	2 lbs. Dry Lime Sulfur 4 lbs. SULFIX Sulfur		
Additional Scab Sprays	1 lb. Dry Lime Sulfur 4 lbs. SULFIX Sulfur		

**THESE DILUTIONS ARE PER 100
GALLONS OF WATER**

1 part Dry Lime Sulfur will make wettable up to 4 parts of SULFIX Sulfur.

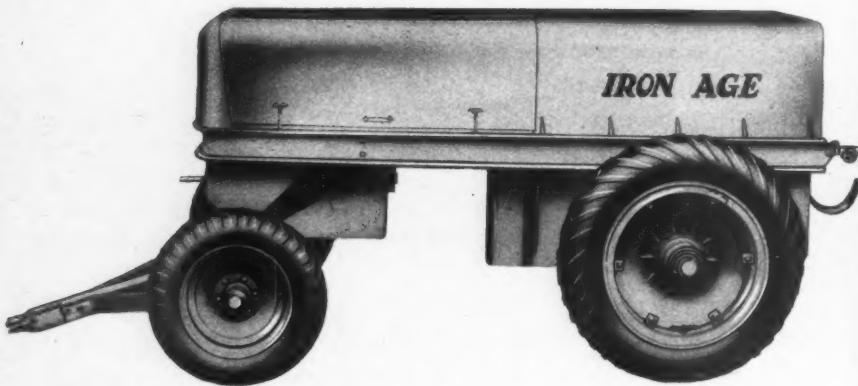
Add 3 lbs. of Sherwin-Williams Arsenate of Lead to each 100 gallons of spray when necessary. When using arsenate of lead add 4 lbs. of hydrated lime to 100 gallons.

SHERWIN-WILLIAMS
SPRAY AND DUST MATERIALS

NEW!

IRON AGE SPRAYERS

1000 LBS. PRESSURE — 14, 20 and 37 G. P. M.



The Iron Age "Victory" Short Turn Cut-under—one of many types

COMPLETE LINE—Orchard and Row Crop Sprayers

EXCLUSIVE FEATURES—A few are:

- Quicker accessibility of plunger, cups and porcelain-lined displacement tubes without tearing down pump, and without special tools.
- Tank is not used as a bridge taking shocks and strains, but rests on independent steel frame which carries the straight axle.
- All pumps standard 1000 lbs. sq. in. operating pressures with plenty reserve power.
- Volumetric efficiency over 99.5%—capacities and pressures rated conservatively. Pumps are slow speed—long life—totally enclosed—self oiling—not dependent upon human element.
- Light draft—Compact. True streamlined with no projecting parts to injure tender branches.
- Interchangeable steel or rubber wheels.
- Pure metal or wood tanks.
- Designed and built for the profit of the grower.
- Priced consistently LOW.

MANY OTHER EXCLUSIVE FEATURES.

Wire or write for complete illustrated, descriptive catalog and prices.

A. B. FARQUHAR CO., Limited, York, Pa.

Largest Eastern Implement Manufacturers

POLLINATION

(Continued from page 7)

Stark, Stayman, Winesap, Winter Banana.

Partly self-fruitful: Baldwin, Ben Davis, Duchess, Early Harvest, Gano, Golden Delicious, Grimes, Jonathan, Maiden Blush, McIntosh, Rome, Wealthy, Yellow Transparent, York.

The four members of the Winesap group, namely, Arkansas Black, Arkansas (Black Twig), Stayman, and Winesap, are especially conspicuous in this respect. They are unfruitful, as a rule, when pollinated with their own pollen. Moreover, they will not pollinate each other effectively and hence should not be planted without the presence of other varieties as pollinizers. Members of the Winesap group produce largely defective pollen and are very poor pollinizers for any variety, including, of course, themselves. But when interplanted with other desirable sorts, they usually yield good crops.

The partly self-fruitful varieties will not yield well when self-pollinated, under best conditions not giving more than 25 to 50 per cent of a full crop. It is very desirable, therefore, to interplant at least two and preferably more of these varieties. This will assure greater benefit from cross-pollination.

The grower frequently wishes to know what varieties are particularly good pollinizers. The following varieties are outstanding as producers of large amounts of potent pollen: Delicious, Jonathan, Ben Davis, Golden Delicious, Wealthy, Grimes, York, McIntosh, Yellow Transparent, and several others. They will not only pollinate each other effectively, but also can be safely interplanted with practically any variety for this purpose.

Of the above list the first four varieties seem to excel the others tested by us as pollinizers. One must keep in mind the biennial bearing habit of some of these sorts, especially York, Wealthy, and Yellow Transparent. They form, as a rule, too few blossoms in the "off year" to be of any great value for pollination.

Evidence seems to point to the various red bud sports as having the same pollination and fruit setting characteristics as the parents from which they came. In this respect the Gano and Black Ben are similar to Ben Davis, Starking and Richardson to Delicious, Gallia Beauty and Red Rome to Rome, Staymared and Blaxtayman to Stayman. This may be true also of most of the other red strains.

All things considered, in setting out an orchard it is much more desirable and certainly safer to plant

MARCH, 1931

four to six varieties than two or three. An example may illustrate this suggestion. If the varieties selected for planting are Stayman, Delicious, Jonathan, and Golden Delicious, then two rows of Stayman should be flanked on either side by two or four rows of Jonathan and Golden Delicious, followed by two rows of Delicious and so on. The main idea in such a planting plan is to keep the highly self-unfruitful varieties, such as Stayman and Delicious, right next to good pollinizers, in this case Golden Delicious and Jonathan.

Although several other insects frequently visit apple blossoms, the domesticated honeybee is the only insect that can be relied upon to bring about effective pollination. This is particularly so when the weather is cold and rainy during the blooming period, or when it is excessively hot and the flowers open and wilt in a few days. It has been demonstrated in a convincing way in numerous instances that it pays to keep bees in the orchard. This is especially true in localities where almost all of the ground has been put under cultivation with very little waste land left to harbor wild insects.

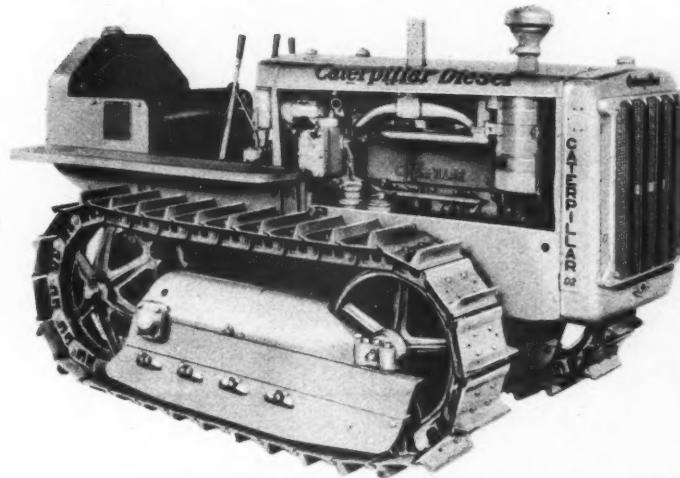
It has been estimated that a single apple flower may produce 70,000 to 100,000 pollen grains and that as many as 50,000 to 75,000 grains may be carried by a single bee on its body. Since only 10 functional pollen grains are necessary to bring about complete fertilization of an apple flower, one can readily see the great possibility of sufficient spread of pollen by the honeybee.

If the trees are young, one good hive for every three to five acres is quite sufficient. Orchards in full bearing require a minimum of one colony per acre. It is advisable to distribute the hives throughout the orchard. Their proper scattering among the trees seems to be an essential feature in pollination. It will assure the maximum number of visits by the bees to flowers.

With ample pollinizers, plenty of bees, and fine weather, there is some danger of overpollination of apple trees, especially when, for one reason or another, they are in a devitalized state. One may have too much of a good thing. The result will be overbearing with its consequent evils, such as fruit of small size and poor color, breakage of limbs and the establishment of biennial bearing. But all things considered, it is much safer to provide facilities for a maximum than a minimum pollen distribution. The size of the crop can be regulated quite effectively by pruning and fruit thinning. There is no known method that will put apples on the tree when the flowers are not properly pollinated.

MARCH, 1938

The Diesel D2 is priced at only \$300 more than the spark-ignition Twenty-Two. (F. O. B. Peoria, Ill.)



ANNOUNCING

THE 3-4 PLOW

DIESEL D2

NOW, "Caterpillar" announces the Diesel D2 Tractor!
NOW, this company builds both Diesel and spark-ignition engine powered tractors in the 3-4 plow size—the Diesel D2 and the famous Twenty-Two!

Into the Diesel D2 have gone "Caterpillar's" years of experience designing and building Diesel Engines and track-type tractors. And the Diesel D2 is backed by the experience and satisfaction of tens of thousands of "Caterpillar" Diesel Tractor owners!

Under average conditions, the Diesel D2's 4-cylinder engine uses only 1 1/4 gallons of Diesel fuel per hour—pulling loads on which the Twenty-Two burns 2 gallons of distillate, tractor fuels or gasoline per hour. *Savings of 60 per cent to 80 per cent on fuel cost may be confidently expected of the Diesel D2—just like the 4 larger sizes of "Caterpillar" Diesel Tractors.*

Both the Diesel D2 and the Twenty-Two have the same sure-footed, all-weather traction—for both have the same fully-proven tracks—the same accurate balance of ample weight. Both are built to the "Caterpillar" Quality Standard—farmers, the world over, know what that means for longer life, lower upkeep, and higher trade-in values!

CATERPILLAR
REG. U. S. PAT. OFF.
TRACTOR CO. • PEORIA, ILL.
DIESEL ENGINES
TRACK-TYPE TRACTORS TERRACERS

CATERPILLAR TRACTOR CO., Dept. A-83, Peoria, Illinois

Gentlemen: I farm _____ acres. My power is _____

Please rush information on the following:

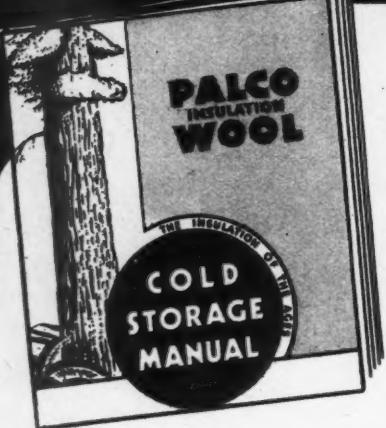
3-4 plow Diesel D2 3-4 plow Twenty-Two 4-5 plow Diesel D4
(Distillate or Gasoline)

Name _____ University of Idaho _____

R. F. D. _____ LIBRARY Town _____

County _____ MOSCOW IDAHO State _____

If your PROFITS Depend on Conserving LOW TEMPERATURE



Write for
this Free
NEW
16-PAGE
INSULATION
MANUAL
NOW

Tells how, why and where to use PALCO WOOL,
durable Redwood bark insulation that provides
PERMANENT THERMAL EFFICIENCY
(0.255 B.t.u., Peebles) at lowest
possible cost.

THE PACIFIC LUMBER COMPANY

100 Bush St., San Francisco

CHICAGO

LOS ANGELES

NEW YORK

NICHOLS

COPPER SULPHATE

99% pure, always uniform—the
standard for home mixed

BORDEAUX MIXTURE

Mono-Hydrated Copper Sulphate
35% Metallic Copper Content

NICHOLS COPPER CO.
A Unit of the Phelps-Dodge Corporation
40 WALL ST. N.Y.C. • 230 N. MICH AVE. CHICAGO



Write for
Booklet
"Bordeaux
Mixture—Its Prop-
eration and use"



ST. LOUIS SPECTACLE HOUSE, Dept. 41-C, 6233 Delmar Ave. **ST. LOUIS, MO.**
AMERICAN FRUIT GROWER

15 DAYS' TRIAL
SEE BOTH FAR and NEAR
NO COSTLY EXAMINATION

FREE EYE TESTER and catalog showing
latest styles and **NEW LOW PRICES**

SEND NO MONEY

Send your name, address and age TODAY to

GRAPE GROWING

(Continued from page 13)

production which has changed but little in principle. Many different formulas that vary the amounts of copper sulphate (blue stone) and lime have been used since Bordeaux was first applied as a spray, but the principle of having copper sulphate and lime combined in water as a spray to control grape diseases has stood the test of time.

The greatest change has taken place in the methods used to apply spray material to the vine. From the use of a brush or broom for applying Bordeaux mixture, as practiced by A. Millardet in France about 1885, to the large power spray outfits now operated in North American vineyards is a great stride.

The grape disease and insect pests have changed but little. Let us here list most of these pests. First we will take the disease pests controlled by thorough spraying with Bordeaux mixture: black-rot, downy mildew, anthracnose and ripe-rot. Second, the chewing type of insect pests now controlled by the use of arsenate of lead applied in combination with Bordeaux mixture: the grape berry moth, the grape root-worm (the beetles of which feed upon the foliage), the grape vine flea-beetle, the common rose-chafers (rose-bug as known by some growers), the grape leaf-folder, the grape curculio, the grape vine looper, the grape plum moth, and in some sections the Japanese beetle. Third comes the sucking type of insect now controlled by the use of 40 per cent nicotine sulphate solution used in combination with Bordeaux and arsenate of lead sprays: the grape leaf-hopper.

All of these pests will not likely be found doing damage in all vineyards or all in the same year, and the Japanese beetle is a special problem of control in the infested districts.

Some interesting grower facts are presented in the following publications: "Growing and Marketing Grapes in Erie County, Pa.," published as Bulletin No. 260 of the Pennsylvania State College and Agricultural Experiment Station in cooperation with the U.S.D.A., and "Practices Followed by Grape Growers in Fertilizing, Tilling, Spraying and Dusting in New York, Pennsylvania, Michigan and Arkansas Vineyards," published as a preliminary report of the U. S. Bureau of Agricultural Economics.

The following statements are taken from these publications:

"About half of the growers used the umbrella system of training.

(Continued on page 28)

MARCH, 1938

ALTERNATE BEARING

(Continued from page 9)

growth, are good indicators of what we may expect in fruitfulness of a tree. Both excessive growth and very poor growth conditions result in poor fruitfulness.

A happy medium of growth condition, usually described as vigorous, has been associated with maximum fruitfulness. As a consequence, every grower tries to maintain this vigorous condition and thus the greatest fruit bearing of his trees. Unfortunately, such a procedure may lead to excess cropping in any given year which would be one way of starting the alternate bearing habit.

Conversely, the elimination of a crop by winter freeze of fruit buds or spring frost in killing all blossoms, will start the same cycle of heavy crops alternating with light or no crops.

Varieties, of course, differ in the extent of response to such conditions, but *all varieties can be upset*, and changed from annual bearing to biennial bearing. This difference in tendency in varieties may be classed as variation of inherited character, or may simply be termed as variation in growth and reproductive responses to environmental conditions.

What can a grower do to prevent such undesirable responses? Considering tree growth alone, it may sound paradoxical to say that the maintenance of a vigorous growth condition by use of fertilizers, cover crops, mulching, irrigation, and other means is of prime importance, unless one sacrifices yields and is willing to accept small annual crops which usually accompany poor growth conditions.

Good, vigorous growth also means the development of large leaf area, which must be regarded as the main source of food materials for growth of tree, fruit, and formation of fruit buds. The question becomes one of distribution of these food materials in a socialistic manner so that all parts of the tree will be furnished with sufficient amounts.

A large crop of blossoms and the subsequent large set of fruit (some of which falls off) necessarily must require large quantities of food materials manufactured by the leaves. Many fruits fall off at June drop because of the heavy competition for food materials. Unfortunately, the formation of blossom buds for the next year's crop enters into this competition for food materials, largely during the months of June and July.

With moderate blossoming and moderate set of fruit, distribution of food materials apparently is suffi-

(Continued on page 26)

MARCH, 1938



A NEW 122-inch wheelbase unit has been added to the Ford line of trucks and commercial cars—to bring Ford V-8 economy to loads in the one-ton range. It is available with either the 60 or 85 hp. V-8 engine and comes in three different body types—Stake, Panel and Express.

For contract hauling, the new Ford V-8 134-inch and 157-inch wheelbase trucks offer maximum performance and overall economy. These units are powered with the 85-hp. engine, now in its seventh successful year. Brakes are larger, quicker stopping. Steering is easier. Construction is stronger in vital parts. 7.50-20 dual tire and wheel equipment is available at slight extra cost.

For loads lighter than those in the one-ton range, the new 112-inch wheelbase commercial cars—with a choice of either the 85 or 60 hp. V-8 engine—do the job with unusual economy.

The 1938 Ford V-8 Trucks are the best looking, most dependable and most economical in all Ford history.

Make an "on-the-job" test and prove for yourself how they cut hauling costs in hard farm service.





● Operating and maintenance costs and depreciation must be figured in the cost of any sprayer. The price of the sprayer is only part of the picture. Add up the figures after five or ten years and you will then know the actual cost of your sprayer.

Hardie sprayers cost less to own and operate any way you figure it—number of gallons pumped per year or period of years, number of trees sprayed, number of acres sprayed with a given pump size. Operating cost records of hundreds and hundreds of Hardie pumps establish the fact.

Advanced design assures the Hardie owner of the most modern sprayer built. This means unusually slow depreciation. Almost limitless wear is provided by slow turning, heavy, forged steel crankshafts in large, replaceable bearings, se-

lective oiling system, wide gears, long connecting rods with no side-thrust, self-aligning, fully lubricated plungers, lubricated cylinders and plunger cups, large, short waterways, large valve openings, ample size and strength in every part.

Hardie gives every grower big sprayer value. The smaller Hardies are built just like the big Hardies and perform with equal efficiency and economy within their ratings. Both large and small growers get the best there is when they buy a Hardie.

Write for the Hardie 1938 catalog—64 pages packed full of sprayer information that every grower should have, showing over 40 sizes and styles delivering from 4 gallons per minute at 300 pounds pressure to 50 gallons at 800 pounds, meeting every spraying need in orchard, grove and field.



THE HARDIE MANUFACTURING COMPANY • HUDSON, MICH.

Branch Factories, Sales and Service Offices: Portland, Ore., Los Angeles, Calif., Brockport, N.Y.

HARDIE

Dependable Sprayers

ACME GRAFTING COMPOUND

A new grafting compound endorsed by Michigan State College. Moderately priced and applied cold with a brush. Used also as a protective coating for injury. We can also supply Hand and Brush grafting wax and wax heaters. Send for price list. Dealers wanted. If interested send for free booklet "Bees & Fruit" by E. R. Root.

M. H. Hunt & Son, 510 N. Cedar St., Lansing, Mich.



NEW SUPER-QUALITY KITSELMAN FENCE

Heavier, amazingly improved galvanizing. Tougher, longer-lasting Copper-Bearing Steel. Low factory prices. WE PAY FREIGHT. 160 styles and heights. Farm, Poultry and Lawn Fences; Steel Posts; Gates; Barb Wire, Fences; Roofing. Write today. KITSELMAN BROTHERS, Dept. 206, Muncie, Indiana.

ALTERNATE BEARING

(Continued from page 25)

cient to take care of everything, including blossom buds for next year. With heavy blossoming and heavy set, the supply of food materials may be insufficient to take care of all the tree's activities, hence blossom bud formation does not occur, which results in no crop the following season.

If trees are blossoming moderately and fruiting moderately *annual cropping* results, which can be maintained usually by maintenance of growth conditions as previously stated. If trees blossom heavily and set a large crop, *alternate bearing* usually results.

A logical procedure would seem to be to thin off fruits to approximate moderate cropping whenever such a heavy set occurs. However, the solution is not so simple, as shown by the thinning experiments of this character.

Heavy blossoming and heavy set make a heavy drain on food materials, so that thinning to a moderate crop does not balance these conditions. More recent experiments show that a greater thinning of fruits, usually 80 per cent removal, is necessary to offset the blossom and fruit demands and permit distribution of food materials for formation of blossom buds. Such fruit removal must be done early (within 35 days after bloom) to be effective and trees must be in a vigorous condition with sufficient healthy leaf area per fruit.

Occasionally alternate bearing trees may have partial removal of blossoms by spring frost which, in effect, results in moderate blossoming. When such frost effects have occurred, moderate cropping was started and annual crops were produced in subsequent years. Similar thinning of blossoms, by hand, or by chemicals has not been found practicable as yet, but requires at least 75 per cent removal of blossoms.

On the other hand, annual bearing trees may form a heavy crop of blossom buds due to a frost effect on the present season's crop, or due to favorable weather conditions during June and July. Such trees are apt to start alternation in bearing unless heavy fruit thinning is resorted to.

Omission of nitrogen fertilizer until after blossoming of such trees also may help by decreasing set of fruit. Too heavy pruning of McIntosh in Wisconsin is considered by Roberts as responsible for increased set and alternate bearing of McIntosh in that State. In case of light blossom bud formation, every effort should be made to insure set by use of nitrogen fertilizers, bees, etc.

In a recent fruit growers' conference in Washington, D. C., Dr. E. C. Auchter, chief of the Bureau of

AGENTS UP TO \$50 IN A WEEK

ZANOL

Big cash profits for you; full or spare time. Over 250 household necessities—things people must buy. Proven fast sellers; steady repeaters; earnings very first day. FORD TUDOR SEDAN GIVEN YOU AS BONUS. I'll show you how to start at once; send you everything—Big Display, Order Book, Catalog, etc. No Deposit—no obligation. Just send name on postcard. ALBERT MILLS, 5158 Monmouth Ave., Cincinnati, O.

BOLENS EASY TO OPERATE GARDEN TRACTORS

Plow—Harrow—Disc—Seed—Cultivate—Spray—Mow—Sizes up to 4 HP.

BOLENS Power Hoe @ \$88.50 for Gardening, Cultivating and Lawn Mowing. Easy operation. Many patented features. It's fun to run a BOLENS. Write Gilson-BOLENS Mfg. Co., 3816 Park St., Port Washington, Wis.

Plant Industry, U. S. D. A., stated that new varieties which tend to be annual should be developed to replace our present bad offenders. If all varieties were annual producers, the apple crop would be more stable from year to year and market supplies more predictable.

With our present alternate bearing varieties, pending such removal in favor of other varieties, the method of heavy, early thinning might seem too expensive, both in labor and in partial loss of crop, but such thinning would be done only in the initial year, the cost of which should be made up the following year, especially if the following crop comes in a year of general light cropping for the country as a whole.

However, with the variety York Imperial, which is sold to a great extent to the export trade, the larger sized fruits borne with moderate cropping of annual Yorks did not find a ready market. The grower would be better off to have York trees strictly alternating, and, if possible, have half of his trees bearing one year and half the next year.

In addition to apple varieties, there are instances of alternate cropping of peaches, apricots, and other fruits. The same principles of correction apply to these fruits.

Conclusions

Alternate bearing of fruit trees can be changed to annual bearing by practical means at the disposal of the grower. Annual bearing can be maintained by the same means. Such orchard practices that will maintain a vigorous growth condition and healthy foliage is one requirement. Adjusting the set of fruit, if necessary, by early annual fruit thinning, or in case of heavy blossoming and heavy set, by heavy early fruit thinning, is another requirement. Special practices such as detailed pruning in removing weak wood, fall application of nitrogen, or withholding nitrogen in case of heavy bloom, mulching to conserve moisture, and irrigation—all contribute in adjusting conditions to meet requirements.

COLD STORAGE HOLDINGS

Cold storage holdings of apples on February 1, according to the monthly report of the U.S.D.A., were 312,000 barrels, 10,938,000 western boxes, 14,202,000 bushels, including baskets, eastern boxes and crates. In 1937 on the same date there were 176,000 barrels in storage, 9,201,000 western boxes, and 7,631,000 bushels, including baskets, eastern boxes and crates.

Stocks of Bartlett pears totaled 19,000 packed boxes compared with 29,000 on the same date last year, 3000 loose boxes as against 6000 in 1937, with all other varieties 620,000 boxes and 21,000 bushel baskets as compared with 379,000 boxes and 22,000 bushel baskets a year ago.

MARCH, 1938

IT HAS Everything IT DOES-Everything IT'S A Beauty

WHAT THE
OLIVER "70"
WILL DO IN
YOUR ORCHARD

ONE DEMONSTRATION WILL SHOW YOU

Before you buy a tractor, there's one thing we'd like to have you do. Ask your Oliver Dealer for a demonstration of the Orchard "70". Just step on the starter and drive it once and we'll let you decide whether or not—

It Has Everything—It Does Everything—It's a Beauty

You do use less fuel to get more power from the Oliver Orchard "70" than any other tractor in the 2-plow class today. The "70" is built that way and does its work that way.

That means operating economy!

You do buy the "70" delivered at lower cost per drawbar horsepower than any other tractor in the 2-plow class today.

That's buying economy!

Make your own test. Drive an Orchard "70" and see how much work you do in an hour. See how little fuel and oil it uses when you drive it.

Think of the best power job you ever did with a tractor in your orchard. Behind the wheel of this easy-riding, streamlined beauty—the Oliver "70" of '38—you'll find out what a real job is like.

Try it any old way—plow, disc, cultivate, mow. Use it with a power take-off sprayer or hauling about the orchard. Try the high compression "70" HC—or the "70" KD for kerosene or distillate. See if you don't say it's the liveliest, sweetest, easiest, "goingest" bundle of orchard power you ever handled.

When the "70" shows you its paces, compare it with any other tractor you have ever handled—and we believe you'll say "It's the '70' for me." Anyway it's worth a little of your time, just for the fun of driving this new beauty. So before you buy any tractor, ask your Oliver Dealer to demonstrate an Oliver "70" in your orchard.

Why Put Up with a Tractor That Does Less?

See and Drive a "70" Before You Buy!

OLIVER "70"

Before you buy any tractor or even a team—ask your Oliver Dealer for a demonstration of the Orchard "70" and orchard tools.

See your Oliver Dealer or send the coupon for the Oliver Orchard "70" Catalog.

See your Oliver Dealer or check and mail the coupon to
Oliver, 400 W. Madison St., Chicago, Ill.

<input type="checkbox"/> Oliver Orchard "70"	<input type="checkbox"/> Oliver Row Crop "80" (3-Plow)	<input type="checkbox"/> Orchard Disc Harrow
<input type="checkbox"/> Oliver Row Crop "70"	<input type="checkbox"/> Oliver Standard "80" (3-Plow)	<input type="checkbox"/> Orchard Cultivator
<input type="checkbox"/> Oliver Standard "70"	<input type="checkbox"/> Oliver 28-44 Tractor (4-Plow)	<input type="checkbox"/> Grain Drill

Name.....

R. D.

University of Idaho

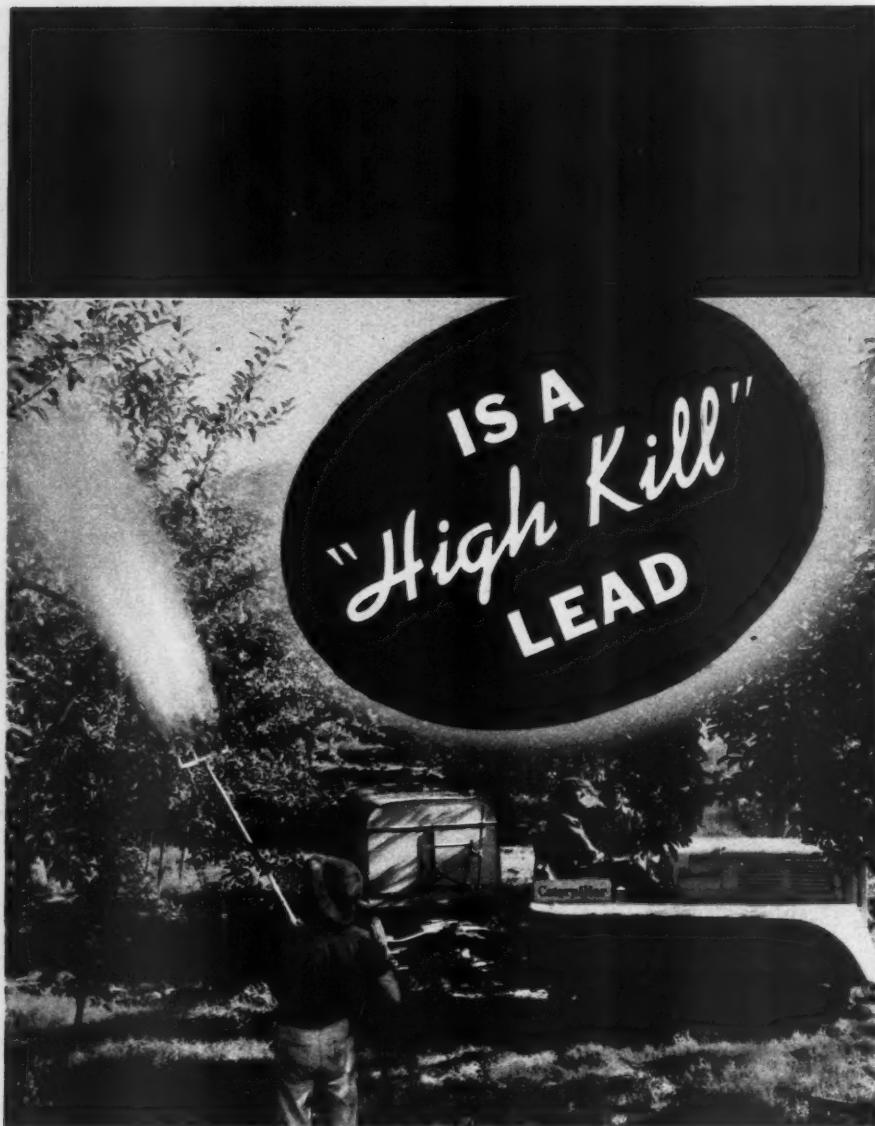
LIBRARY

State.....

APR 3 1938

AMERICAN FMOGOW IDAHO

PAGE 27



GRASSELLI Arsenate of Lead is a high deposit lead. It is compatible with summer oils and when used together, the combination acts both as an insecticide and an ovicide—offering additional control of later codling moth broods. GRASSELLI Arsenate of Lead remains well in suspension. It works well through long lines and nozzles without clogging and can be removed by ordinary washing methods.

When a spreader is used—try GRASSELLI Spreader-Sticker. It is a very economical spreading and sticking agent because ordinarily only one ounce is needed to each 100 gallons of spray.

See your dealer for GRASSELLI Agricultural Chemicals.

**GRASSELLI Arsenate of Lead • NuREXFORM Arsenate of Lead
AND OTHER GRASSELLI AGRICULTURAL CHEMICALS**

Lime Sulfur Solution

Dry Lime Sulfur

Calcium Arsenate

DUTOX fluorine insecticide

Dormant and Summer Oils

SULFORON wettable sulfur

Flotation Sulfur Paste

GRASSELLI Wettable Sulfur

"Fluxit" Spreader

Copper Compound-A

GRASSELLI Spreader-Sticker

Bordeaux Mixture

Cryolite

"Black Leaf 40"

GRAPE GROWING

(Continued from page 24)

This system and the Chautauqua arm required less time and cost less than did the Kniffen system. The yields were about the same for each of the systems." You will note that nothing is said about growers *not* pruning or training. This cultural practice is well established.

"Only seven per cent of the growers did not use fertilizers, manure or cover crops." You will note that the feeding of the vine is also an established practice.

"About one-third of the Michigan vineyards studied were sprayed or dusted twice, and one-third three times during the season. Vineyards sprayed three or more times produced more than did vineyards sprayed less than three times, but on the average, the vineyards sprayed the greatest number of times were also cared for more intensively in other ways."

"The extent of diseases and insects as well as the effectiveness of spraying, varies from year to year depending somewhat upon weather conditions. Sprays may be considered as efficient weapons with which to reduce or eliminate damage from diseases and insects. Some growers consider an unsprayed vineyard as unnecessary a risk as an uninsured building."

The progressive grower is fully aware that spraying is his insurance against a cull crop. A grower would find it difficult to insure his grape crop against hail damage after the storm had hit his vineyard. This condition is more or less true in the case of spray pest insurance, so a complete spray program for the grape would be based upon the principle of keeping the vine, the foliage, and the fruit insured against pest damage by a spray covering.

In a similar position to that of hundreds of fruit growers throughout the country, Sol H. Esarey, Indiana grower, writes **AMERICAN FRUIT GROWER** Reader Service Bureau:

"I am interested in a cold storage plant for my orchard. I have about 160 acres just coming into bearing and eventually will need space for 30,000 to 50,000 bushels. Harvest temperatures run from 60 to 70 degrees. Apples would need to be kept 30 to 100 days. Would be pleased to have any suggestions."

AMERICAN FRUIT GROWER Reader Service Bureau is ready to assist all subscribers who are planning cold storages. Address inquiries to Reader Service Bureau, **AMERICAN FRUIT GROWER**, 1370 Ontario St., Cleveland, Ohio.

GRAPE DISEASE CONTROL

By A. L. PIERSTORFF
Ohio State University

BLACK-ROT and downy mildew were uncommonly well distributed throughout the eastern grape growing region in 1937. Anthracnose and powdery mildew were also common, but did not exert the destructive powers shown by the former two diseases. Vineyards so located that the lake breezes were able to dry the foliage quickly after rains were not troubled seriously by diseases. However, some growers in the Great Lakes grape growing region did have difficulty and did not recognize black-rot and downy mildew in their early stages and permitted the diseases to become severe before sprays were applied for their control. In other districts some distance from the lake most growers recognized black-rot, but could not control it with their spray schedules, which were designed for a normal season.

The year 1937 was far from normal as far as prevalence of diseases was concerned. In fact, more diseases were present than during any time in the last decade. Downy mildew was more abundant on the foliage than on the fruit and in the end probably did not do nearly as much harm to the grape crop as black-rot.

Conidia of the black-rot fungus exude about the time the buds are in the delayed dormant stage. They emerge in a continuous chain, appearing, when viewed under a microscope, much like hot dogs emerging from a sausage machine. These spores are splashed and washed about by the rains and cause the early infections.

A 6-8-100 Bordeaux mixture plus fish oil one pint applied at the delayed dormant period and again when the young shoots are eight to 10 inches long will start the grower out on the correct procedure for controlling black-rot and downy mildew. Of course, additional sprays will be necessary at petal fall and again in about 10 days. The concentration of the Bordeaux mixture should be reduced in the latter two sprays. These four sprays generally will give control, and later sprays, which may soil the fruit, need not be applied. In the event control has not been secured by these sprays, one of the insoluble coppers may be used in the latter part of the season. This program will also control anthracnose and powdery mildew sufficiently well to permit the grower to harvest a good crop of grapes.

MARCH, 1938



★ NuREXFORM Arsenate of Lead remains well in suspension, so that the first trees sprayed are as well protected as the last. It spreads evenly, leaving no unprotected gaps where chewing insects may attack. NuREXFORM is an economical spray requiring no additional spreader.

For early combination sprays—NuREXFORM is the ideal lead arsenate. It mixes readily with lime sulfur without sludge formation. The particles of NuREXFORM are extremely fine, thus eliminating clogged screens and nozzles.

For effective economy try NuREXFORM Arsenate of Lead.

GRASSELLI Arsenate of Lead and NuREXFORM Arsenate of Lead are now colored pink to identify them as poisons. This coloring in no way affects the quality of the products.

No Humus or Erosion Problem In This Orchard



LAST year at the Ohio Experiment Station a yield of 1575 pounds of air-dried hay was secured where no fertilizer had been applied between the trees, but where 200 pounds of 'Aero' Cyanamid per acre had been broadcast, the yield was 4000 pounds.

400 pounds of Cyanamid per acre brought the yield of dried hay up to 5000 pounds.

Broadcast Granular 'Aero' Cyanamid In Your Orchard Then Watch The Cover Crop Grow!!

Write for Leaflet F-142



AMERICAN CYANAMID COMPANY
30 ROCKEFELLER PLAZA NEW YORK, N. Y.

for EXTRA MONEY
KEEP BEES

30 Beekeepers tell about their successes with Bees in free booklet "Does Beekeeping Pay?" Write for 64-page catalog with helpful information and a sample copy of a 64-page monthly bee magazine, "Gleanings in Bee Culture." Tell us if you keep bees. Bees are kept everywhere. No extra land needed. Easy to start with Root's inexpensive beginner's outfit.

THE A. I. ROOT CO.
Box K-41 Medina, O.

In March the buds begin to swell.
Let Hamilton guns serve you well.
Will Hamilton

Spray Guns with Controlled Streamline

W. L. HAMILTON & CO.
BANGOR - MICHIGAN

Six Models - A GUN FOR EVERY PURPOSE
Send For Catalog

ARTIFICIAL EYES Let us send you a large assortment to select from in your own home. Low prices. Fit guaranteed. Book Free. DENVER OPTIC CO., 1206 University Bldg., Denver, Colo.

AMERICAN FRUIT GROWER

WINDMASTER WATCH THIS NAME
New Patented Spray Gun
Greater distance Better fog
Write to
Windmaster Spray Guns
Hood River, Oregon
WATCH THIS NAME
WINDMASTER

PAGE 30

SWEET CHERRIES

(Continued from page 11)

wired in an upright position on the south and west so as to shade the trunks in winter, have proved effective in preventing sunscald injury. Spring frosts cause frequent losses to the early blossoming sweet cherry trees. Because of the need for cross-pollination and setting of a high proportion of the blossoms to secure heavy yields, rainy or windy weather at blossoming time results in greater losses with sweet cherries than with most fruits. Rains at harvest time are the bane of sweet cherry growers of western Oregon, and all too frequently cause damage in eastern Oregon, Washington, and Idaho, stimulating a search for non-cracking sweet cherries of quality.

While several new varieties of sweet cherries are promising for trial, none appears likely to replace the standard ones in the commercial orchards of the West. The following varieties deserve consideration in planning a new planting:

Lambert is now the leading black shipping cherry in the northwest and intermountain states, and is becoming more popular than Bing because of its hardier, healthier tree, and later ripening season which makes it less susceptible to damage from cracking by rains at harvest.

Bing is the leading late shipping cherry in California, and is widely grown for shipping in the Northwest. Like Lambert, the fruits are very large, reddish-purple, firm, crisp, sweet, and of excellent shipping and dessert quality. Bing is the nearest approach to a perfect market cherry, yet tenderness to cold, lack of vitality of the trees, and susceptibility to cracking have made it less profitable than Lambert except in ideal cherry climates.

Napoleon is the only white-fleshed cherry of commercial importance, being extensively grown for canning and maraschino making. It is not popular for shipping because of bruising and discoloration. Napoleon is more vigorous and productive than Bing and Lambert, but is more often damaged by cracking and is not as hardy in tree as Lambert. The fruits are large, firm, blushed, and of high quality, being more sprightly in flavor than Bing and Lambert.

Lambert, Bing, and Napoleon are intersterile and will not pollinate each other satisfactorily, hence one or more of the following varieties should be planted with these three to insure pollination.

Windsor is a leading black sweet cherry in the East because of its hardy, productive tree and resistance to cracking and brown rot. In western districts it is not liked by

MARCH, 1938

shippers because of its lack of size and light colored, moderately firm flesh. Tests at the Utah and Ohio experiment stations show Windsor to be an excellent pollinizer.

Black Tartarian is the leading early shipping variety grown in California, and is popular as a pollinizer. There are several distinct strains of this variety, some of which are poor pollinizers, while others are unproductive. In the late shipping sections, Tartarian is less valuable than Windsor or Deacon because it does not ship or can well and cannot compete on the markets with the more popular Bing cherries from California.

Schmidt (Schmidt Bigarreau, Black Orb). A splendid large, black, firm cherry rather resistant to cracking, in season with or just before Bing. Schmidt is a leading variety with Windsor in eastern sweet cherry plantings. In the West, however, this otherwise useful shipping variety is seldom productive, blossoming heavily but only occasionally bearing enough fruit to be profitable. The trees, while extremely vigorous, suffer from die-back in the tops, and the fruit is not equal in flavor to Bing or Lambert. Tests at the Utah station show this variety to be an excellent pollinizer.

Black Republican (Black Oregon, Lewelling). There are several distinct strains or varieties of similar type grown under these names. They are late ripening, firm-fleshed black cherries of medium size which have been used extensively in the Northwest as pollinizers for Lambert, Bing, and Napoleon. In the dry interior sections the fruit is often small and has a bitter flavor.

Chapman, Early Purple, and Burbank are extra early varieties with small, black, soft fruits which are of importance only in California. Early Rivers and Seneca are two new varieties of this type which appear promising to precede Black Tartarian. Early Rivers is an English cherry, while Seneca is a recent introduction from the New York Experiment Station, where it was raised from a stone of Early Purple Guigne. It is vigorous, productive, and two weeks earlier than Tartarian, but smaller than that variety.

Promising new sweet cherries of the black shipping type are Deacon, Giant Geante d' Hedelfingen, and Gil Peck.

Deacon is a black cherry of the Bing type which is being planted as a pollinizer in Washington, Idaho, and British Columbia. Tests by the Washington Experiment Station show it to be an excellent pollinizer for the commercial varieties. While not usually quite as large or firm as Bing, the fruit of Deacon is acceptable for shipping at somewhat lower

(Continued on page 32)

MARCH, 1938

SEE THE NEW MYERS *Silver Cloud*

POWER SPRAYERS



MYERS Silver Cloud Sprayers are offered in both engine powered and tractor operated models. Come completely equipped with hose, guns and fittings. Wheels either steel or rubber tired. Frames all steel, arc welded. The heart of these sprayers is the MYERS Self-Oiling Pump. No other power spray pump has such perfect lubrication and proven service life. All working parts run in oil. Fully enclosed yet remarkably accessible. VALVES stainless steel. CYLINDERS porcelain lined. Improved double cup expansion PLUNGERS with adjustable take-up. Duplex, Triplex and Quadruplex sizes.



EVERY power spray user will profit by getting acquainted with the new MYERS Silver Cloud Sprayers. Here are spray outfits truly streamlined inside as well as out. Their smoothly contoured housings and gleaming aluminum finish bespeak their inner smoothness of mechanism and function. With all the reliability which has made MYERS spray machinery famous for three generations, these Silver Cloud rigs embody to the full those modern engineering improvements which mean easier handling, speedier operation, greater economy and increased durability. Be sure to inform yourself about their many advantages. MYERS Spray Catalog shows complete equipment for work in orchards, groves, vineyards, row crops, tobacco fields, greenhouses and gardens. Engine powered, tractor operated and traction driven sprayers; hand operated bucket and barrel sprayers; knapsack and compressed air sprayers. Mail handy coupon today for your FREE copy.

THE F. E. MYERS & BRO. CO.

47 Church Street Ashland, Ohio
"PUMP BUILDERS SINCE 1870"

Power Sprayers	Water Systems
Hand Sprayers	Hand Pumps
Power Pumps	Pump Jacks
Sump Pumps	
Hay Unloading Tools	
Door Hangers	
Centrifugal Pumps	

Send free, the name of your nearest dealer and information on items checked.

University of Idaho

LIBRARY
MOSCOW IDAHO (30-3)
Self-Oiling POWER SPRAYERS

MYERS



TEMPERED RUBBER

GIVES THE "U. S." ROYAL BOOT ONE
THIRD LONGER WEAR THAN ORDINARY
BOOTS. DISTINCTIVE TIRE TREAD SOLE.
PIGSKIN FINISH. AND, LIKE OTHER
"U. S." BOOTS, EVERY BOOT IS LEAK-
TESTED BEFORE IT LEAVES THE FACTORY.

United States Rubber Company

United States Rubber Products, Inc.
1790 Broadway New York

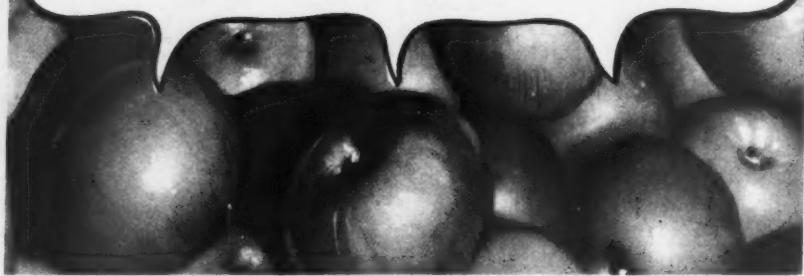
ASK TO SEE THE
NEW ROYAL
RAINCOAT WITH
PIGSKIN FINISH

AMERICAN FRUIT GROWER



PAGE 31

**GIVE US PLENTY OF NITROGEN
-and we'll give you plenty of PROFITS**



Agricultural authorities say plenty of nitrogen is needed for best fruit yields and profits. Supply this nitrogen at low cost with Domestic Sulphate of Ammonia. It's extra rich (20.5% guaranteed) in readily available nitrogen—the kind that's fast-acting, yet lasting, too. Clean, inexpensive, easy to apply—Sulphate of Ammonia is the most widely used nitrogen fertilizer in the world!



THE BARRETT CO. • 40 Rector Street, New York, N. Y.

Domestic SULPHATE OF AMMONIA

FOR *Better Crops* . . .

to keep plants or trees free of
fungus use COPPER

**Copper Sulphate
Tri-Basic Sulphate
Copper Carbonate**

You are assured of finest quality when your
dealer supplies you with the products of

TENNESSEE CORPORATION



ATLANTA, GEORGIA LOCKLAND, OHIO
IN FLORIDA, U.S. PHOSPHORIC
PRODUCTS CORP., TAMPA..

**SHOOT GROWTH INCREASED
6 TIMES**

**FREE
BULLETIN
TELLS HOW**



Every fruit grower interested in the growth and development of trees should send for a copy of this bulletin, "How to Plant and Grow Trees." It reports the conclusions digested from years of intensive research. Tells how experiments with Peat Moss at State Experiment Station increased new shoot growth 6 times.

Before you plant any more trees, send for this bulletin. It's Free for the asking. Just address Dept. AFG-3.

PEAT INSTITUTE OF AMERICA

Division of Peat Import Corporation

155 John Street New York, N. Y.

Standard Garden Tractors

Powerful 1 and 2 Cylinder Tractors for Small Farms, Gardeners, Florists, Nurseries, Fruit and Poultry Men.

THREE SIZES
With Ample Power for Field, Haying and Truck Crop Tools. Run Pumps, Saws & Belt Machines.

Steel or Rubber Tires
High Wheels-Enclosed Gears
LOW PRICES
Write for Easy Terms Plan and **Free Catalog**

STANDARD ENGINE CO.
Minneapolis, Minn. Philadelphia, Pa. New York, N. Y.
3221 Como Ave. 2668 Market St. 208 Cedar St.

KILL WEEDS
NEW METHOD KILLS SEEDS & ROOTS TOO
AEROIL

FREE SEND POSTAL FOR 48 PAGE BOOK 565 Park Avenue, West New York, N.J.

AMERICAN FRUIT GROWER

SWEET CHERRIES

(Continued from page 31)

prices and is said to be excellent for home canning. The trees are large, vigorous, very productive, and less subject to cracking than Bing.

Giant appears promising as a large firm-fleshed cherry in the East, but has not proved superior in the West; however, the true Giant may not have been well tested since this variety seems to have been mixed with Bing, Lambert, and other less desirable cherries and consequently is difficult to get true-to-name.

Geante d' Hedelfingen is a promising new variety of Lambert type from Europe. The fruit is large, firm, of good quality and dark color, and seems rather resistant to cracking from rains. Preliminary tests by the writer at the New York station in 1935 indicated that pollen of this variety is interfertile with Bing, Lambert, and Napoleon.

Gil Peck is a new, large, firm, black variety of good quality recently introduced by the New York station which seems worthy of extensive trial as a commercial and pollinating cherry.

New varieties of the white-fleshed type are Victor and Emperor Francis, both of the Napoleon type and considered to be superior to the older sort in the East.

While Mazzard stocks have been traditionally considered the best for sweet cherries, there appear to be many conditions under which Mahaleb or Stockton Morello rootstocks are much superior to Mazzard. While G. H. Howe of the New York station has shown the superiority of Mazzard rootstocks on heavy, rather wet soils in New York, observations in New York, Michigan, and Utah indicate that trees on this stock are more subject to winter injury. In the drier, gravelly or sandy loam soils of Utah trees on Mahaleb are more vigorous, hardy, and longer lived than those on Mazzard.

G. L. Philp of the California station reports that sweet cherries on Stockton Morello are much longer lived than those on Mazzard and Mahaleb on wet, heavy soils in California. This Stockton Morello is a variety of the Morello sour cherry type which is propagated by suckers. Sweet cherry trees on this stock are much dwarfed and come into bearing early. The sweet cherry scions overgrow the stock. Trees on this dwarfing stock are planted closer together than those on Mazzard and Morello. Planting of trees on Mazzard and Mahaleb roots 26 to 35 feet apart is recommended to prevent crowding when trees mature.

Pollen for necessary cross-pollination in the sweet cherry orchard

may be provided by planting every third or fourth row to a pollinizing variety, or by planting a compatible variety every fourth tree in every fourth row. Another plan being used with satisfaction by some growers is to plant Bing, Lambert, or Napoleon solidly, and topwork a pollinizer such as Deacon, Windsor or Tartarian into the leader branch. In Utah, where Tartarian is used, the birds do not bother the later varieties as much as where no Tartarians are available. Where wild or tame bees are not plentiful, growers find it profitable to arrange with beekeepers to place colonies of bees in the orchard at blooming time, one hive to an acre being considered sufficient. The bees must be removed before spraying.

Sweet cherries must be planted early in the spring in northern sections with cold winters in order to secure a good stand and satisfactory growth the first year. Cherry trees do not transplant as readily as other stone fruits, hence early planting and attention to watering and cultivation are particularly important. In California, early winter planting is recommended.

In order to take advantage of the root development attained in late winter and early spring before spring planting would be possible, one Utah grower planted in November, mounded up the soil to the height of a foot to protect the trees and cut them back to the height of the mound. He secured excellent growth, but the heavy pruning involved in this low heading and subsequent removal of low branches necessary to secure a head at the desired height would probably set back the trees' development enough to offset the gain in growth made. Mulching the basin about the newly planted tree with strawy manure or other suitable mulching material is helpful in retaining moisture.

Sweet cherry trees are readily trained to the modified leader type, their handling as young trees resembling the training given apple trees. Disbudding of the newly set trees after the shoots begin growth is advisable to secure well-spaced lower branches. Heading the newly set trees from 30 to 36 inches makes possible the selection of more scaffold branches the first year. Two-year-old trees permit selection of several scaffold branches the first year, such branches being headed back to live outside buds. From five to eight well spaced scaffold branches with wide angles may well be selected, spaced not less than six inches apart.

Sweet cherry leader branches usually grow more vigorously than the side branches, and require suppressing after the scaffold branches

(Continued on page 35)

MARCH, 1938



It isn't far by telephone

AROUND the road, or even as the crow flies, it may be a long way; but by telephone it is no distance at all.

Use the telephone to keep in touch with market trends and farm activities and to do business; to talk with neighbors and chat with relatives; to get doctor or veterinarian when the need for him stands out above everything else.

Use the telephone—it saves time, saves trips, makes your day more eventful and more profitable—it gives you a fuller, friendlier, pleasant way of living.



BELL TELEPHONE SYSTEM

ROOT ORCHARD DUSTERS

"First Choice Everywhere Among Agricultural Authorities"

First in ECONOMY

First in EFFICIENCY

First in DURABILITY

3/4 h.p.—1 h.p.—5 h.p. SIZES

Write for 1938 catalog

for complete line of these famous Root Dusters

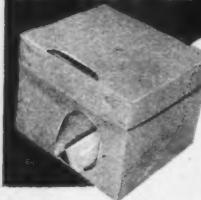
1051 Power Ave., Cleveland, Ohio

PICTURE SHOWS 5 H.P. 8-OUTLET ROOT DUSTER IN ACTION

AMERICAN FRUIT GROWER

PAGE 33

HERE'S GOOD NEWS for APPLE GROWERS



**LIGHTER...
STRONGER
...GREATER
PROTECTION**

The NEW HANKINTAINER for Jumble Packing

• Made entirely of corrugated paper... light yet strong... with 3-ply side wall reinforcements and triangular truss base... this new 56-pound HANKINTAINER is the complete answer to the packers' problems. Stows tightly in truck or storage... sustains 400 pounds weight... perfect for store display with no repacking. Speeds handling and lowers costs. Comes flat, assemblies without stapling or tools.

A STYLE FOR EVERY NEED

This is but one of a full line of special HANKINTAINERS for all kinds of fruits and vegetables... carrying your name and address... building demand for your brand.



2, 4 and
8-Qt.
Baskets

Send today
for samples

HANKINS CONTAINER CO.
3044 WEST 106th STREET CLEVELAND, OHIO

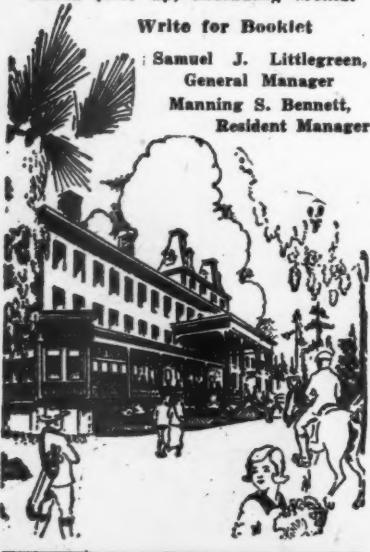
PINE FOREST INN SUMMERTIME, S. C.

The Aristocrat of Midsouth Resorts Restored to its former prestige and grandeur. Famous for having entertained two Presidents of the United States. Famous for its long history of service and excellence of its cuisine. Known throughout the world. NEAREST the FAMOUS GARDENS Enjoy the wonderful Midsouth at this modern yet historical and beautiful hotel.

Rates \$5.00 up, Including Meals.

Write for Booklet

Samuel J. Littlegreen,
General Manager
Manning S. Bennett,
Resident Manager



BERRIES • (Continued from page 10)

planting, loss from winter injury, and lack of a good crop the following season are points against late summer or fall planting.

The best stands are obtained when only plants with strong, fibrous root systems are used. If plants are not set immediately upon arrival from the nursery, heel them in by planting close together in a furrow. They can then be set out in regular rows when time permits.

The roots of strawberry plants should be kept moist during planting operations. Long, straggly roots should be clipped before the plants are set, and planting holes must be large enough to hold the roots without crowding. It is advisable to water the plants after setting.

The matted row system of planting is popular. Under this method, plants are set from 14 to 20 inches apart in the row with the rows four to five feet apart. Runners are allowed to develop from the mother plants so that by the end of the season well-matted rows two to four feet in width have developed.

The double-hill system, in which plants are set three feet apart in all directions with runner plants to be spaced between the mother plants in the rows by double-hill arrangement, is rapidly gaining in favor as it results in higher yields of quality fruit.

Cultivation of the planting will be necessary to keep down weeds, but such cultivation must be shallow to avoid injury to the strawberry roots.

Improved BLUEBERRIES

Delicious, U. S. Gov't Hybrids, large as grapes. Cabot, Hubel, Concord, Rancocas, Jersey, etc.

1-Yr. Plants, 50 cents each, \$5 dozen, \$40 per 100

2-Yr. Bearing Age, \$1.00 each, \$10 dozen

EXO. C. MORSE WILLIAMSON, N. Y.

NUT TREES, CHERRY TREES,
PERSIMMON TREES AND
FRUIT TREE SEEDLINGS.
Send for catalogue.

J. F. JONES NURSERIES
Dept. A-38 Lancaster, Pa.



SPECIAL SALE OF FRUIT TREES AT GREATLY REDUCED PRICES

Send us your list of wants for special low quotations.

We can furnish all leading varieties of Apples — Peaches — Cherries — Pears — Plums — Grapes — Berries — Shrubs — Roses — Etc.

General Catalog on Request

KELLY BROTHERS NURSERIES

23 Maple St., Dansville, N. Y.

AMERICAN FRUIT GROWER

BERRY PLANTS FRUIT TREES



SCARFF'S "Best" new and standard varieties. Nearly 50 years of testing and growing in famous Miami Valley. Newest raspberries; Taylor and Marey, largest reds; Indian Summer, a large and profitable ever-bearer; Soda, heaviest yielding of all raspberries. Large Red Lake Currants, Poorman Goosberries, Sweetening Berries, Thornless Youngberries, Boysenberries. Sensational New Fall-Bearing Cherry, delicious sweet cherries ripening in September. New "Harden" Peach, New Miami Red Apple, Stanley Plum, German Pear, Hardy Northern Nut Trees. Complete stock of the best Ornamental Trees, Shrubs and Evergreens. All are described in our 1938 catalog. Send for your FREE copy today.

W. H. SCARFF'S SONS, Box 131, New Carlisle, Ohio

DON BYERS' HARDEE

THE FIRST AND ONLY PEACH GRANTED A
PATENT ON THE PROVEN CLAIM OF
COLD RESISTANCE AND HARDINESS

ALL THE GOOD QUALITIES OF ELERA
TA PLUS BUD AND WOOD HARDINESS

Today's Outstanding Peach

Write for Literature

THE FRENCH NURSERIES
At CLYDE, OHIO Since 1863

FREE AMAZING OFFER 4 PKTS. Petunias VALUE 40¢



Just to get acquainted with new customers will send 4-10 pkts fancy Petunias, including New Fluffy Petunias for only 4 names flower lovers. Will include 5 different colors. All are double-flowered. Send 10¢ for postage and handling & this ad, enables you to receive a FREE PREMIUM OFFER. Write for free booklet "How to Grow & Care for Your Garden" — Simply limited. Send today.

S.W. PIKE—Seedman, Inc., Dept. 512, St. Charles, Ill.

T. B. WEST & SON

MAPLE BEND NURSERY

Perry, Ohio Box 41

"West Has The Best"

of FRUIT TREES, PLANTS and
ORNAMENTALS
Send for Catalogue

Superior FRUIT TREES BERRIES-ORNAMENTALS

Every Fruit Grower and Home Owner should have a FREE copy of our big 68 page Illustrated Catalog. Faithfully describes the Best Fruits and Ornamentals for farm, suburban and city plantings, at money-saving prices. Write today.

Harrison's Box 18
NURSERIES INC. BERLIN
MARYLAND

TAYLOR (Red) RASPBERRIES

Best Commercial Berry Grown
\$15.00 per 1000 and up

GUARANTEED TRUE TO NAME

Write for Raspberry and Strawberry Prices

Dunham's Grand Mere Nurseries

Baroda, Mich.

FRUIT TREES SHRUBS - ROSES - PERENNIALS

Highest Quality—Reasonable Prices

Write for FREE CATALOG

THE BARNES BROTHERS NURSERY CO.

Box 40, Yalesville, Conn.

FRUIT TREES

Peaches, Pears, Apples, Plums, etc. Excellent stock. Write for catalog. Box "A," The Storrs & Harrison Company, 84 years at Painesville, Ohio.



STRAWBERRIES

Allen's 1938 Berry Book Describes

Best Methods, Plants, Varieties

Premier, Fairfax, Dorsett, Catawba

COPY FREE WRITE TODAY

THE W. F. ALLEN CO.

284 Evergreen Ave., Salisbury, Md.

MARCH, 1938

SWEET CHERRIES

(Continued from page 33)

are established during the third and fourth years by heading back to laterals. Where young cherries grow vigorously and reach a length growth of over 15 inches by early June, the shoots can be clipped back a few inches to cause branching, thus securing two sets of branches the same season.

Young cherry trees require protection from insects such as cherry slug, black cherry aphids, and red spider mites, also from leaf spot disease in humid regions. Slugs are easily handled with lead arsenate spray or dust, but the second brood in August and September will bear watching. Aphids are best controlled by nicotine oil, tar oil emulsions, or pyrethrum when the eggs hatch in early spring. Summer oil or wettable sulphur is useful for mite control, the sulphur also being helpful for leaf-spot. In the East, Bordeaux is used to control the leaf-spot disease. On bearing trees, lead arsenate should not be used after the cherries are half grown.

Cultivation during spring and early summer, followed by soil building cover crops, is advisable in young cherry orchards. Where growth is not adequate, applications of nitrogenous fertilizers should be tried. In arid western sections, careful irrigation to replace water withdrawn by the trees is essential in rapidly building large, productive trees. Where growth is rank, care should be taken to check vegetative growth in late August and September to avoid winter injury associated with immaturity. Cover crops and withholding irrigation water during this period is advisable.

Much of the die-back common in older bearing cherry orchards can be prevented by keeping the trees vigorous rather than allowing them to become spur-bound. Non-vigorous trees are apt to set so heavily that the size of fruit is reduced seriously, while the trees, exhausted by over-bearing, fall an easy prey to winter injury and *valsa* canker.

Improvement of soil management practices such as cultivation, fertilization, and irrigation should be tried first in overcoming lack of vigor. Where such improvements are not adequate, a general thinning out and heading back pruning of the less vigorous branches should be made to increase vegetative growth. Orchards kept in sod generally lack vigor as compared to those under a cultivation-cover crop system; however it is possible that a legume sod system would be satisfactory where moisture is adequate and manure or nitrogen fertilizer added in early spring.

MARCH, 1938



Above illustration shows one of the sprayers at the Price Orchard, Newark, Ohio, being made ready for spring spraying operations, an important phase of seasonal fruit farm equipment preparation.

INVENTORY TIME FOR FRUIT FARMS

IT'S change-over time. Spray rigs must be prepared for spring work and that means cleaning out the radiator, filling the motor with a good oil, checking spark plugs and a thorough going-over of pump, hose and tank. Trucks and tractors also need the radiator cleaning and oil renewal to make them ready for the busy season ahead. Probably the most troublesome occurrence when trying to put an important, hurried spray on the trees or hauling fruit, fertilizer or spray chemicals by truck, is to have radiators boil. Nothing is better to remove winter accumulated sludge and sediment from radiators than Sani-Flush, which can be purchased at any grocery store. High quality oil is friction's arch enemy, especially firm-bodied oil that won't break down under constant orchard and highway operating conditions.



This Modern, homelike Hotel, on FLORIDA'S most healthful SOUTHEAST COAST, affords a refined atmosphere for rest. ONLY 25 minutes' drive to MIAMI and its varied diversions. MODEST RATES: GOLF, FISHING, SHUFFLEBOARD, OCEAN BATHING, TENNIS, CLOCK GOLF, Etc. Official AAA Hotel.—Ownership-Management.

DANIA BEACH HOTEL
DANIA FLA

AMERICAN FRUIT GROWER



Rid Your Crop of Infestation with "CORONA DRY"

EVERY YEAR is a "bad-bug year" for some unfortunate orchardist. But the scourge of the destructive Codling Moth, Apple Worm, Bud Moth, Curculio and other pests holds little fear for the experienced fruit man who sprays systematically with "Corona Dry".

This extra punch poison is 99.9/10% pure! Rids your orchards of infestation quickly and thoroughly. Yet there is no free arsenic left to "burn" the foliage.

Successful orchardists have been spraying with "Corona Dry" for more than 30 years. They know its uniform high quality — rely on it. Safeguard your crop with this fast-action poison. It will bring you finer, healthier fruit.

SEND FOR FREE SPRAY CHART

Complete details for the proper spraying of fruit, vegetables, flowers, etc. will be found in the Corona Spray Chart. To receive free copy, simply send your name and address to the Corona Chemical Division of the Pittsburgh Plate Glass Company, Milwaukee, Wisconsin.



OTHER CORONA PRODUCTS

CORONA MERKO	for treating seed corn
OATS DUST	for treating seed oats
COPPERCARB	for treating wheat seed
50% PLUS	for treating wheat seed
P. D. 7 DUST	for treating seed potatoes
CALSENATE	high quality calcium arsenate
BORDEAUX	distinctive "chemically struck" product

OPPORTUNITY ADS

Only 15c a Word—CASH WITH ORDER. Count each initial and whole number as one word.
ADDRESS: AMERICAN FRUIT GROWER, 1370 Ontario Street, Cleveland, Ohio

BEES

BEES—GOOD SIDE LINE, PLEASURE, PROFIT. Send \$1.00 for 190 page book, "First Lessons in Beekeeping," and one year subscription. Catalog free. AMERICAN BEE JOURNAL, Box G, Hamilton, Illinois.

PACKAGE BEES FOR POLLINATION. TWO-POUND package with queen \$2.45. Three-pound package \$3.15. Four-pound package \$3.85. Also cypress hives. Write for catalog. STOVER APIARIES, Mayhew, Mississippi.

PACKAGE BEES FOR POLLINATION. 2 lbs. @ \$2.45. 3 lbs. @ \$3.15. With Italian Queens. Rush orders for quick service. RAPIDES APIARIES, Winfield, Louisiana.

BEES FOR CROSS POLLINIZING FRUIT BLOOM OR bearing honey. Write for prices. D. C. JACKSON, Funston, Georgia.

BERRY PLANTS

200 BLAKEMORE OR DUNLAP STRAWBERRY plants delivered, \$1. Millions of plants; rockbottom prices. Free Catalog on Strawberry, Youngberry and Boysenberry. WALLER BROS., Judsonia, Arkansas.

MILLIONS CERTIFIED BLAKEMORE STRAWBERRY plants. This strain has never developed a yellow leaf plant. \$2.25 thousand; 5000 or more \$2.00 thousand. R. R. MCUMBER, Greenfield, Tennessee.

NECTARBERRY, SWEETER, OUTYIELDS BOYSENberry. Also Thornless Boysenberry, Thornless Loganberry, Youngberry, Rockhill, Perfection Everbearing Strawberry. Cultural Guide free. BENEDICT RANCHO, 1037 Deana, El Monte, California.

CULTIVATED BLUEBERRIES. LARGE, DELICIOUS. Productive, Ornamental. Very profitable. Best Varieties. Strong Plants. Low prices. Catalogue. FRANKLIN COUNTY NURSERIES, Greenfield, Massachusetts.

THORNLESS BOYSENBERRY, NECTARBERRY, PERFECTION Everbearing, Thornless Youngberry and many others. Write today for catalogue. POLLARD'S BERRY PLANT NURSERY, El Monte, California.

CERTIFIED AROMA, DUNLAP, BLAKEMORE Strawberries; 250, \$1.00; 550, \$2.00; Dorsett, Bellmar, Premier; 225, \$1.00; 500, \$2.00. STINSON'S, Wentworth, Missouri.

BLAKEMORE, AROMA, KLONDYKE, MISSIONARY strawberries: \$2.50 thousand. Dorsets, Fairfax, Catskill, Bellmara: \$3.00. SHELLY PLANT FARMS, Memphis, Tennessee.

STRAWBERRY PLANTS: AROMA, BLAKEMORE, Klonkyde and Missionary. \$1.75 per 1000. JOHN LIGHT-FOOT, Birchwood, Tennessee.

BERRY PLANTS, ALL KINDS. NEW STRAWBERRY—Frost Proof. Catalog free. E. W. POTTER, Leslie, Michigan.

CURRENT PLANTS. WHOLESALE PRICES. LLOYD BRODER, Ludington, Michigan.

CROTALARIA SEED

CROTALARIA SPECTABILIS—WORLD'S FINEST soil building crop. Build up your soil, prevent erosion. Prices reasonable. Write for free pamphlet. SIMPSON NURSERY COMPANY, Monticello, Florida.

CROTALARIA SEED: SPECTABILIS, INTERMEDIA and Striata. Also Aly's Clover. GRAND ISLAND NURSERIES, Eustis, Florida.

DAIRY GOATS

LEARN ABOUT GOATS: "GOATKEEPER'S PRIMER" free with 3-year subscription, \$1.00. Sample free. DAIRY GOAT JOURNAL, Dept. 803, Fairbury, Nebraska.

ELECTRIC FENCE

REVOLUTIONARY NEW FLUX DIVERTER MAKES FARMAK Electric Fencer more efficient—more economical—increases life safe six volt batteries. Utility model \$12.50. 30 days trial. Long term guarantee. Write for catalog. exclusive agent-dealer offer. PARKER-MCCBORY MFG. CO., 85-CX, Kansas City, Missouri.

EVERYTHING FOR THE ORCHARD

PRUNING, GRAFTING, BUDDING TOOLS—KNIVES, Saws, Shears, Hand and Pole Pruners, Jones Patch Budgers, Waxes, Wax Melters, Raffia, Rubber Budding Strips, Medicated J. & J. Nursery Tape, Tree Seal, Tree Kote, Tree Surgeon Supplies, Cod-o-Cide Tree Bands.

SPRAYERS, DUSTERS, MATERIALS—POWER AND Hand Sprayers. Spray Materials and Dust Mixtures. Hand and Power Dusters. Sprayer Accessories. Gums, Rods, Nozzles, Hose. Weed Killers, Wood Preservatives, Hydrometers, Hygrometers, and Magnifiers. EDWIN C. TYSON, Wholesale and Retail, Flora Dale, Pennsylvania.

FARMS WANTED

WANTED—TO HEAR FROM OWNER OF FARM FOR sale for spring delivery. WM. HAWLEY, Baldwin, Wisconsin.

FOR SALE

FOR SALE. COMMERCIAL FRUIT FARM, EASTERN Pennsylvania. 400 Acres Orchards and Vineyards. 200 Acres Farmland. Apples, Peaches, Pears, Plums, Grapes, etc. Pruned and Sprayed regularly. Easy Access to Markets. A Real Bargain. THE MINERS' & LABORERS' BUILDING & LOAN ASSOCIATION, Mount Carmel, Pennsylvania.

PRODUCTIVE 110 ACRES. 1000 BEARING BEST Varieties Apple Trees. Low Price. CORWITH ORCHARDS, Saluda, North Carolina.

GOOGLES—RESPIRATORS

DON'T SPRAY YOUR EYES—GET CESCO SPRAYER'S Goggles. \$1.00 postpaid. Save Your Lungs—get No. 80 Respirator. \$2.00 postpaid. Light, comfortable, durable. CESCO, 2300 Warren, Chicago, Illinois.

HOSIERY

FIVE PAIRS—BEAUTIFUL SILK HOSIERY—\$1.00. Three (Fufashioned) Pairs—\$1.00. DIRECTCO, AF221W Broad, Savannah, Georgia.

MALE HELP WANTED

STEADY WORK—GOOD PAY—RELIABLE MAN wanted to call on farmers. No experience or capital required. Pleasant work. Home every night. Make up to \$12 a day. Wonderful new proposition. Particulars free. Write MCNESS CO., Dept. 126, Freeport, Illinois.

WANTED—PROMINENT ORCHARD GROWERS TO book orders for our fruit and ornamental trees. Weekly cash advances on orders. JONES NURSERY, Woodlawn, Virginia.

MISCELLANEOUS

EVENTUALLY YOU'LL LIVE IN FLORIDA. KEEP in touch with its agricultural opportunities by subscribing to its leading citrus and truck magazine. 50c per year; 3 years, \$1.00. FLORIDA FARM AND GROVE, Jacksonville, Florida.

NURSERY STOCK

EVERY SINGLE TOWNSEND FRUIT TREE COMES Sealed-To-Type. They cost no more than ordinary trees but what a difference they make in your profits. Send for your copy of Free Booklet. Tells all about this new Townsend "Sealed-To-Type" system and how it insures you against poor fruit. All leading varieties of Apples, Peaches, Pears, Plums. Also describes and illustrates in colors, new, better paying varieties of Strawberries, Raspberries, Grapes, Blackberries, bred for heavier yields by the World's Largest Growers and Shippers of Strawberry plants. This book is valuable to every Fruit Grower and New Beginner. Write today for your Free Copy. E. W. TOWNSEND SONS NURSERIES, Dept. 41, Salisbury, Maryland.

PEACH TREES—VIRGINIA'S LARGEST GROWERS of Fruit Trees offer June Bear Peach in the following varieties and sizes at prices you can afford to pay: 15 to 24 in., \$9.00 per 100; \$70.00 per 1000; 18 to 24 in., \$12.00 per 100; \$90.00 per 1000. We pay transportation and allow 5% discount for cash with order. 30 sold at 100 rate, 300 at 1000 rate. Belle of Georgia, Carman, Champion, Crawford's Early, Crawford's Late, Early Elberta, Early Rose, Elberta, Golden Jubilee, Greensboro, Indian, Krummels, Late Elberta, Mayflower, Mikado, Red Bird, Rochester, Salway, Slappy, South Haven, Valiant, Vedette. Write for our Complete Price List offering other sizes and varieties, as well as other fruits. WAYNESBORO NURSERIES, Waynesboro, Virginia.

FRUIT TREES AND BERRY PLANTS. WE OFFER the most complete listings of new and tested improved varieties of fruits and berries available. Millions of triple inspected, hardy, well-rooted, thrifty trees and plants, grown under ideal soil and climatic conditions, backed by 50 years production experience. Fruit and berry growing are among the Nation's best paying crops. It pays to plant Bountiful Ridge Grown trees and plants. Proved best by test. Write for 1938 complete catalog. BOUNTIFUL RIDGE NURSERIES, Dept. 9, Princess Anne, Maryland.

FREE! AMERICA'S MOST BEAUTIFUL NURSERY and seed book. Full natural colors. Amazing new low prices on finest, heavy bearing apple and other fruit trees. Greater values, better service and a sincere desire and effort to please you has made us America's largest Direct-To-You Nurseries. Guaranteed stock. Low prices. Write INTER-STATE NURSERIES, 29 E. Street, Hamburg, Iowa.

FRUIT TREES AND FRUIT PLANTS. IN THE NEWER and better varieties grown by Virginia's largest growers. Write for Free Copy 44 Page Planting Guide, listing more than 800 varieties of Fruits and Ornamentals. WAYNESBORO NURSERIES, Waynesboro, Virginia.

BEACON—NEW ALL RED EARLY EATING APPLE! Tops early market. \$2.00 bushel when others bring 75c. Free catalog. Big discounts on early orders. ANDREWS NURSERY, Faribault, Minnesota.

HARDY ENGLISH WALNUTS. CRATH'S CARPATHIAN. New. Parent stock hardy forty below. Good bearers. Excellent nuts. Fast growers. Ornamental. Free pamphlet. SAMUEL GRAHAM, Bostwick Road 3, Ithaca, New York.

FOR SALE: APPLE SEEDLINGS, APPLE ROOT grafts, both old and new varieties. Apple and peach trees. JONES NURSERY COMPANY, Woodlawn, Virginia.

GRAPE VINES, WINE, TABLE VARIETIES. LOWEST price any quantity. Marcy, Taylor, newest red raspberries, \$4.00 hundred. WHEELER NURSERY, Pean York, New York.

NEW HARDY PEACH AND APPLE CATALOGUE FREE. MARKHAM, Fruit Breeder, Xenia, Illinois.

VIRGINIA CRAB SCIONS, 100 FOR \$3.00. STANDARD. JENSENS NURSERY, Ames, Iowa.

ORCHARD SUPPLIES

32 USED SPRAYERS, ENGINES, PUMPS, DUSTERS, other equipment. CORY ORCHARDS, Cory, Indiana.

PATENTS

National Trade Mark Company
Munsey Building
Washington, D. C.
Trade Mark Specialists

PHOTO FINISHING

THE PHOTO MILL. IMMEDIATE SERVICE! NO Delay! Roll developed, carefully printed and choice of two beautiful 5 x 7 double weight professional enlargements, one tinted enlargement, or eight reprints for 25c each. Reprints 25¢ each. THE PHOTO MILL, Box 629-75, Minneapolis, Minnesota.

ROLLS DEVELOPED—TWO BEAUTIFUL DOUBLE Weight Professional Enlargements. 8 Never Fade Prints, 25¢. CENTURY PHOTO SERVICE, La Crosse, Wisconsin.

POROUS IRRIGATION HOSE

IRRIGATION PAYS—WRITE ABOUT POROUS HOSE Irrigating. B. & B. IRRIGATING SYSTEM, Port Clinton, Ohio.

POSTAGE STAMPS

525 DIFFERENT (CATALOG \$13.00) INCLUDING TRIANGLES, DIAMONDS, ZEPPELIN. \$1.00. SEEJAYCO STAMPS, 2459 Station St., Chicago, Illinois.

SERVICES

TREE GRAFTING, BUDDING AND PRUNING IN season. Write now. HOWARD H. MARTIN, Princeton, Illinois.

TOBACCO

KENTUCKY'S FANCY—BUY THE BEST. 5 POUNDS extra fancy Chewing or Smoking. \$1.00. Pearl Handle, double bladed pocket knife FREE. Satisfaction guaranteed. RYAN FARMS, Murray, Kentucky.

POSTPAID: MILD, MELLOW, CLEAN REDLEAF chewing 10 pounds \$1.50; Smoking \$1.25. F. WAINS-COTT, Sharon, Tennessee.

Propagating Black Walnuts

THE propagation of walnuts by grafting and budding is at best somewhat difficult. The skilled operator may have an unexplainable run of hard luck, and beginners sometimes are unusually lucky. Both have to contend with the most uncertain factor of all, the weather.

To eliminate this unfavorable factor, C. C. Lounsbury of Ames, Iowa, who reported his experiments at the Washington meeting of the Northern Nut Growers' Association, attempted bench grafting of black walnuts. As a result of his work he believes the method has possibilities and his suggestions are set forth in full as follows:

1. Bench grafting should be tried by nurserymen to supplement stock of grafted trees in dry years.

2. In the absence of a greenhouse, or an electric case, hot callused grafts can be made anywhere and set outdoors with success if the spring is warm and moist, but grafts should be placed where they can be watered if necessary and properly hardened off before lining out.

3. Scion wood used should be at least three-eighths of an inch in diameter, and lower buds of new wood or two-year wood have proved best.

4. Seedlings should be first year and should be one-half inch or more at the crown, and roots should be cut off as little as possible.

5. Roots should be grafted just below the crown, and the upper tongue of the root pared so the root will not sprout. Walnuts split easily, so short whip grafts tied with some strong material like adhesive tape seem to make better unions and give better results when not under ground.

6. Hot callusing should be at 75 to 80 degrees F., and should not be done until the normal time, so the weather will be warm outside when the grafts are set out.

7. Walnut scions should not be hot waxed, but should be sealed at the tip with cold wax, adhesive, or lanolin to prevent evaporation. If the weather gets too dry, bags can be tied over the scions with rubber bands until the grafts are well started.

8. Grafts may be tied with waxed cord, waxed cloth, adhesive tape, or rubber bands, but hot wax seems to injure walnut grafts more or less at all times.

9. Rubber bands do well underground but adhesive tape is better above ground, as it holds grafts more firmly and still lets the sap out so it does not sour, and loosens in time to prevent strangling.

10. Grafts made in the fall or winter made the best growth, insects did not bother them until spring, it gave time to mature the graft by fall, and they can be put directly into storage for sale.—GEORGE L. SLATE, Sec'y, Northern Nut Growers' Assn., Geneva, N.Y.

TREE BANDS

BETA-NAPTHOL TREE BANDS "SURE KILL" THE worms. Write for latest prices and literature. M. A. KOELLER Barry, Illinois.

WRITE FOR CIRCULARS AND PRICES. CHEMICALLY treated Bands. Satisfaction guaranteed. EDWIN H. HOUSE, Saugatuck, Michigan.

VEGETABLE PLANTS

FROSTPROOF CABBAGE PLANTS. LARGE, STRONG, field-grown Wakefields. Early Dutch succession, Copenhagen, Gloria, Goldenacre. 500—50c; 1000—\$1.00; 5000—\$4.00. 10,000—\$7.50. Will ship C.O.D. order direct this ad. Full count, safe arrival and satisfactory plants guaranteed or money refunded. Free catalog. Tomato, Pepper Plants. OMEGA PLANT FARMS, Omega, Georgia.

TRIAL OFFER TO GET ACQUAINTED—25 FROSTPROOF Cabbage Plants for 10¢ postpaid. Free—1938 catalog of all kinds of Vegetable Plants with special premium offers. Write today. PIEDMONT PLANT CO., Box 913, Albany, Georgia.

FREE CATALOG—FROSTPROOF, CERTIFIED, FIELD-Grown Cabbage and Onion Plants. Also Tomato, Pepper, Sweet Potato, Eggplant, Cauliflower, and other plants. Special offers. Write today. UNION PLANT CO., Texarkana, Arkansas.

C.O.D. FROSTPROOF CABBAGE AND ONION Plants. All varieties. 500, 50c; 1,000, 90c; 5,000, \$3.75. Good Plants. Prompt Shipment. GEORGIA PLANT CO., Albany, Georgia.

NEW

- YARD LIGHT
- CORRUGATED APPLE BOX

By HANDY ANDY

Elimination of culls is to be one of the principal endeavors of the National Apple Institute, the nationwide apple advertising and promotion organization. Many cull shipments result from poor judgment of packers, but I also believe that properly constructed packages will do much to cut down the curse of culls on modern fruit marketing, for well packed, top-grade fruit is often thrown into lower grades by damage occurring in storing, shipping, and marketing when containers do not offer protection. My address is AMERICAN FRUIT GROWER, 1370 Ontario St., Cleveland, Ohio, so drop me a line if you have any ideas on uses of the new type containers.

YARD LIGHT •

Rural electrification has probably progressed further in the fruit field than in any other branch of agriculture. Fruit growers, because of



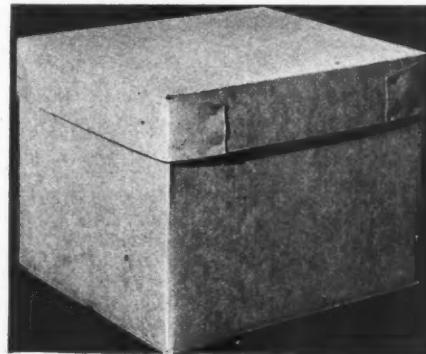
their specialized operations, have utilized electricity in many ways. Perhaps one of the most beneficial uses of electricity on fruit farms is for lighting of homes, packing houses and yards. For the latter application a new light has just been announced: Packed for shipment in a sturdy carton, the light is ready for assembly when received. A large reflector provides an abundance of illumination and the light parts are protected against weathering by a coating of heavy enamel. Views of the new light

in the shipping carton and also assembled are shown in the accompanying illustrations.

While I'm no advocate of manicures for fruit growers, I do know that many of us have or are suffering from brittle, cracked fingernails. It's not possible to handle spray materials, grade and wash fruit, work with tractors and cultural equipment without breaking fingernails and scratching up hands. One of the ways to keep hands and nails in good condition is to apply glycerine. Best treatment for nails is to soak fingertips in the glycerine. Glycerine with rose water or other toilet water has long been a remedy for chapped, rough skin.

CORRUGATED APPLE BOX •

Of particular interest to all apple shippers is a new bushel container for jumble packing made entirely of corrugated paper. It is, of course, much lighter than a wooden box, yet is strong and rigid when assembled.



A new style of reinforcing is said to overcome the difficulty which has marked some of the other apple containers of this size made of corrugated paper—the tendency to bulge and distort in handling. In tests, this new container sustained a dead-weight of 400 pounds, it is reported, without distortion, showing its practicability for carload and truck shipping and for storage.

Both box and cover come flat and no tools or machines are necessary for assembling—just glue or a few short lengths of gummed tape.

On many fruit farms where dusters are used there is frequently a need for nicotine dust. Directions for making small quantities of dust are: Place hydrated lime, dusting sulphur or other dust to be used in a can, churn or small keg which has a tight-fitting lid. Pour the correct amount of 40 per cent nicotine sulphate over the dust in the container; add 10 to 15 small stones about the size of hen's eggs, close the lid tightly and roll the container back and forth for about 10 minutes. For a one per cent dust, use one and one-fourth pounds of 40 per cent nicotine sulphate (commercial nicotine sulphate) to 48½ pounds of the dust.

THAT BIRD DOESN'T KNOW
SANI-FLUSH
CLEANS OUT ANTI-FREEZE



NOW'S THE TIME TO CLEAN OUT YOUR RADIATOR

A WHOLE WINTER'S accumulation of rust and sludge is choking the cooling system of your car. Clean it out! You can do it in a few minutes—for 10c—with SANI-FLUSH.

Don't take a chance on an overheated motor. It's dangerous and expensive. Just pour in SANI-FLUSH. (Follow directions on the can.) Run the motor. Drain and flush once. Refill with clean water. SANI-FLUSH cannot injure aluminum cylinder heads or motor fittings. You find SANI-FLUSH in most bathrooms for cleaning toilets. Sold by grocery, drug, hardware, and five-and-ten-cent stores—25c and 10c sizes. The Hygienic Products Company, Canton, O.

Sani-Flush Safe
NOT CAUSTIC

KINKADE GARDEN TRACTOR

and Power Lawnmower
A Practical, Power Plow and Cultivator
for Gardeners, Suburbanites, Florists,
Truckers, Nurserymen, Fruit Growers
Low Prices - Easy Terms
American Farm Machine Co.,
1105 33rd Av. SE, Minneapolis, Minn.

SECRETS OF SUCCESS in PRUNING!

40 page book Free with purchase of a "Snap-Cut" Pruner (or send 10c for book only.) You can do more work with less fatigue with "Snap-Cut" Pruners. Their cleaner, easier, non-jarring cutting action will not injure bark!

No. 119 - comfortable, non-pinch finish, 8" long - easily cuts ¾" limbs - \$3.50 postpaid or Both Pruners for \$5.00 postpaid.

No. 149

No. 140 - a long handled pruner for heavier work - 25" long, cuts 1 ½" limbs - \$3.50 postpaid or Both Pruners for \$5.00 postpaid.

"Snap-Cut" Pruners

SEYMOUR SMITH & Son, Inc.
63 Main Street
Oakville, Connecticut

SUCCESSFUL ORCHARDS

● A "ROUND TABLE" PAGE FOR EVERY GROWER ●

NORTHERN GROWER HAS IRRIGATION PROJECT

BY way of a clipping from his local newspaper, Minnesota fruit grower Albert Loffelmacher reports on his recently planned irrigation project.

The clipping states that a dam is to be built on a small creek. Water impounded behind the dam will be pumped to the orchard and small-fruit plantings. Cost of the dam has been set at approximately \$5,000. The creek across which the dam will be constructed flows into the Minnesota River which borders the Loffelmacher orchard.

Concerning his fruit farm operation, Mr. Loffelmacher says: "I have 40 acres of apple trees interplanted with plums and cherries. The plums and cherries will be removed as soon as the apple trees need all the room. Apple trees are spaced 36 by 38 feet.

"I started this orchard in 1920, putting out about 300 trees each season. I am top-working standard varieties such as Red and Golden Delicious, Winesaps, and McIntosh on Hibernal stock. Up to the present time I have had no loss and very little injury except on Winesaps during the winter of 1934-35.

"I am constantly testing new and standard varieties for this climate and believe that with proper care and management many of these varieties can be successfully grown in this section.

"Nearly all my crops are sold retail direct to customers who travel as far as 75 miles, some coming several times for berries, plums, cherries, grapes, and apples. I intend to put out another block of 40 acres of trees as soon as I have decided on varieties best adapted to the climate, soil, and trade demands."

CONTROLS BORERS WITH TREE PAINT

FROM a sickbed, one of our Illinois readers, W. B. Dean, writes: "I saw an item on last month's 'Round Table' page about the control of the flat-headed apple tree borer. I think I have a better way of controlling this insect as well as other pests. It is put on four or five times a year and I know it works well on my own trees. The ingredients of my mixture are: two quarts of coal tar, one quart of crude carbolic acid, one ounce of blue vitriol, one ounce of arsenate of lead, one pound of sulphur, and enough hydrated lime to make the mixture the consistency of paint. Apply with an old paint brush. If the bark is scaly or rough, clean with a hoe or some such instrument.

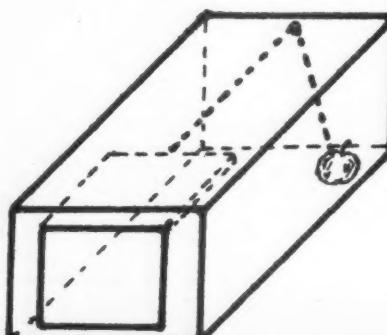
"The mixture is healing to the bark, my trees are healthy, and the bark is green. Weak crotches have been made strong by this paint. I have drawn together split branches with wire, using pieces of old tire to protect the bark, and then put on plenty of this tree paint every two weeks. In one year's time the crotch is strong again. I cannot say enough in favor of this tree paint."

This page is a place for growers to get together and exchange experiences and ideas. The beginner, as well as the veteran, will find here many practical suggestions for better and more profitable fruit growing. In return for the helps you receive from this page, be ready to pass on, for the benefit of others, any new idea, method or procedure you have developed or run across. Just jot it down as it occurs to you (a postcard will often do) and mail it to the "ROUND TABLE EDITOR," AMERICAN FRUIT GROWER. Don't worry about fancy writing. What the readers of this page want are practical pointers—that are to the point.

APPLE TREE WOOD IS VALUABLE

J. W. DICKERSON of Iowa reports, "Sound apple tree trunks and good sized branches are in considerable demand for tool handles, drawer pulls, chess men, toys, and other uses. Fruit growers who have supplies of this type of lumber on hand should get in touch with the U. S. Forestry Service, Washington, D. C., for a list of possible buyers."

This looks like a way to get rid of some of those trees that have been pulled out other than by burning them. Even if the returns from them take care of only the expense of pulling the trees, it will help cut down operating costs.



The type of box rabbit trap used by G. B. Cooper who reports a good catch.

AMERICAN FRUIT GROWER

SOIL MANAGEMENT FOR CITRUS GROVE

"ON our 75 acres of oranges, lemons, and grapefruit," says the California Barnhill Ranch manager, "we maintain a cover crop from November through February. During the spring months we disk and apply fertilizer. Irrigation is the principal soil management practice from May through September. Then manure is applied in October and the cover crop goes in again in November. Pipelines with standpipes at each tree row carry water for irrigation. We are planning to expand our fruit planting with lemons and avocados."

SIMPLE RABBIT TRAPS GIVE GOOD RESULTS

G. B. COOPER is the second Minnesota grower to take his place at the "Round Table" this month. He writes: "I thought I would contribute something for other fruit growers. It is a rabbit trap that has been a success for me. Any ordinary box with a drop door cut out of the end will serve as a trap. The door opens into the inside of the box. Any type hook will hold the door open.

"A piece of salted apple is placed in the back of the box in a bent wire holder. A string runs from the bait through a steeple to the hook holding up the door. When the bait is moved, the string is pulled and the door falls shut.

"I have had several of these traps out since early fall. My little wirehaired fox terrier watches the traps each morning. If there is a rabbit in a trap, he stands by it and barks. Any dog could be trained to look after the traps. I have even caught jackrabbits in my traps."

LOCAL COLD STORAGE USED BY CUSTOMERS

AN AMERICAN FRUIT GROWER reader of 20 years' standing is grower H. B. Krebs of Pennsylvania. He reports:

"During the past season we sold a good many apples to consumers who put from one to 15 bushels in a local cold storage. We believe this is rather unusual."

YOUNG ORCHARD SOILS ARE CULTIVATED

THE Kelly Brothers, Alabama orchardists, have this to say about their planting and soil management operations:

"We are planning to expand our orchard plantings which at the present time are made up of about 80 acres of Early Harvest, Kelly's June, and Transparent apples, Kieffer pears, and Damson plums. The trees are planted 30 by 30 feet. Most of our planting is done in February. After the trees are set we cultivate the soil in the young orchards for four or five years and then sow down in lespedeza."

This is another instance of the popularity of lespedeza as a cover in southern orchards.

EXTRA

Orchard Brand News



EXTRA

VOL. 2, NO. 2

MARCH

1938

EASTERN EDITION

FLASH! TWO NEW FUNGICIDES PROVE ADVANTAGES IN CONTROL TESTS

MICRO-SPRAY, NEW SULFUR FUNGICIDE OF TRUE MICROSCOPIC FINENESS, STEPS UP EFFECTIVENESS and Uniformity of Control

Micro-Spray Sulfur enters the field after intensive testing against other sulfur fungicides. This super-fine micro-spray has a particle size that is many times finer than ordinary 325 mesh wettable sulfurs. MICRO-SPRAY obtains increased effectiveness through an entirely new wetting principle that assures a more thorough and uniform deposit.

Micro-Spray, by virtue of its high content of extremely fine, pure elemental sulfur, substantially increases protection against apple scab and other fungus diseases without the caustic action characteristic of lime sulfur solution.

Many leading growers have found in Micro-Spray a safer and more dependable fungicide. In addition to improving the growth of foliage and finish of fruit, it has proved easy and economical to use.

"34" Copper Spray Contains Maximum Copper Consistent with Safety

The new Orchard Brand "34" Copper Spray has consistently proven its superiority over the old types of copper fungicides. This new spray contains nearly three times as much metallic copper as ordinary Bordeaux Mixture. An exclusive process combines high potency with a broader measure of safety.

This new copper spray reduces the amount of bulk in the spray tank, being used in substantially reduced poundage. Due to its high concentration and greater toxicity per unit of copper, "34" is ultimately more economical.

"34" contains no free lime, and deposits a thin, high potency film that does not interfere with fruit coloring or leaf activity. The unique chemical

stability of "34" affords valuable protection against fruit rusting. This means also that "34" is effective on fruit and foliage for a longer period of time.

"34" is easy and convenient to use. It is merely sifted from the bag into the spray tank—thus no preliminary mixing is required. Furthermore, it will not clog the spray nozzles, thereby saving a lot of time and energy.

CONTROL: "34" is recommended particularly for control of: Scab, Blotch and Bitter Rot on Apples, Peach Leaf Curl, Cherry Leaf Spot, Black Rot of Grapes; also for certain fungus diseases which attack potatoes, tomatoes and other truck crops.

GENERAL CHEMICAL COMPANY Executive Offices: 40 Rector Street, New York, N. Y.

*Sales Offices: Atlanta • Baltimore • Boston • Buffalo • Charlotte • Chicago
Cleveland • Denver • Kansas City • Los Angeles • Minneapolis • Montezuma (Ga.)
Philadelphia • Pittsburgh • Providence • San Francisco • St. Louis • Wenatchee
Yakima • In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto*

GET THE **DOUBLE** *PROTECTION*

OF

DOW "MIKE" SULFUR!



Over and over again "MIKE" Sulfur* has proven itself the outstanding fungicide because it does a two-fold job.

First is the highly effective protection "MIKE" Sulfur gives against apple scab. This results from its high toxicity due to its extreme fineness. Having a particle size of approximately 1/5000 of an inch, or 15 times finer than 325 mesh, "MIKE" Sulfur provides the uniformity of coverage and strong adhesion essential to effective control.

The second and equally important feature of "MIKE" Sulfur is that it promotes the growth of healthy and abundant foliage so essential to successful crops.

Research indicates that for every apple produced, a tree requires from 40 to 50 leaves. Thus, the heavier the foliage, the greater the crop a tree can mature. A specific tree sprayed with "MIKE" Sulfur showed an average of 5.5 leaves per spur, while trees sprayed with caustic materials were able to retain only 2.5 leaves.

Thus, "MIKE" Sulfur gives the double advantage of completely controlling apple scab—*plus* freedom from the danger of burning foliage.

Include "MIKE" Sulfur in your spray program. Profit by the *double protection* of this better spray material.

THERE IS A DOW INSECTICIDE FOR EVERY PURPOSE

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN
Branch Sales Offices: 30 Rockefeller Plaza, New York—Second and Madison Sts., St. Louis—Field Building, Chicago



*Trade Marks Reg. U. S. Pat. Office